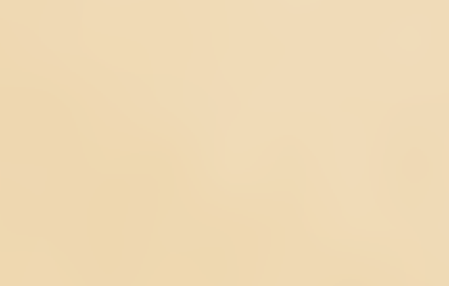


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LUNACY AND MENTAL DEFICIENCY.



THE  
TWENTIETH ANNUAL REPORT  
OF  
THE BOARD OF CONTROL  
FOR THE YEAR 1933.

PART I

*(Presented pursuant to Act of Parliament.)*

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LONDON

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THE  
TWENTIETH ANNUAL REPORT  
OF  
THE BOARD OF CONTROL,  
1934.

(FOR THE YEAR 1933.)

**INTRODUCTORY.**

MENTAL DISORDERS.

*Accommodation in County and Borough Mental Hospitals.*

The development of the mental health service in common with other health services has necessarily continued to be restricted by financial difficulties, but in spite of these difficulties satisfactory progress has been made. Indeed, so far as accommodation in public mental hospitals is concerned, the position has distinctly improved. The aggregate number of patients in excess of the authorised bed space has fallen from 1,717 (men 607, women 1,110) on the 1st January, 1933, to 843 (men 387, women 456) on the 1st January of this year. This improvement in the figures was mainly due to the opening of the new Middlesex hospital at Shenley, where patients began to be admitted on the 1st January. The formal opening of this fine hospital took place on the 31st May, when His Majesty the King, accompanied by Her Majesty the Queen, was graciously pleased to perform the ceremony. This is the first occasion on which a public mental hospital has been opened by the Sovereign in person, and His Majesty's gracious act will give great encouragement to all who are concerned with the mental health service. The Address presented to The King and His Majesty's Reply are reproduced in an Appendix to this volume.

Although in the aggregate the shortage of beds which two years ago caused grave anxiety has now been materially reduced, the net figure, which is arrived at by totalling aggregate surpluses and deficiencies, is inevitably somewhat misleading, as it tends to conceal the existence of serious shortage in particular areas. A shortage of beds in any given area retards admissions and



so leads to an apparent reduction in the incidence ; for this and other reasons the net increase in the numbers under care is not a true index of the position, though it has a value for purposes of comparison with previous years. The total number under care in public mental hospitals increased during the year by 1,348, a total which is below the quinquennial average. The true increase, however, is larger than these figures indicate, since in some areas, notably in Lancashire, patients urgently in need of active treatment have had to be retained in public assistance institutions because there were no beds available for them in mental hospitals. We are very glad to learn that the Lancashire Mental Hospitals Board appreciate the gravity of the situation in their area and are taking measures to deal with it by the addition of much needed Admission Hospitals and Convalescent Villas. The position in South Wales has improved now that the new hospital at Swansea is in full operation, though there is still overcrowding in several Welsh hospitals, which we have suggested might be relieved by judicious boarding-out of suitable patients. Elsewhere the position is generally easier. While for various reasons the total number under care can never be a true index of the incidence of mental disorder, the relatively small increase during the year at least affords some indication that the strain under which many have suffered has not been reflected in any increase in the number of new cases. Indeed the actual increase, having regard to the rather lower death rate in 1933, is less than might have been expected.

#### *Boarding-out patients from Mental Hospitals.*

Though the number of patients suitable for boarding-out is necessarily limited, and probably not much more than five per cent. and almost certainly less than ten per cent. of the total, we regret that more extended use is not made of a form of care which is economical. It saves capital expenditure, and, if the patients are wisely chosen, is beneficial to the patients, since it enables them to live a more normal life than is possible within the curtilage of a mental hospital. But if this method of care is to succeed it is essential to choose suitable patients and equally essential to find the right type of guardian. In large and congested urban areas boarding-out presents obvious difficulties, but even these difficulties are not insuperable, as the progress of the Banstead experiment has shown. In the agricultural counties the difficulties are much less and we have watched with great interest the success of the scheme at St. Audry's (Suffolk). Both are referred to subsequently in further detail. We are convinced, however, that no experiment on these lines can succeed without the co-operation of trained social workers not only to find suitable guardians but to visit the patients, to smooth away the many little causes of friction which are apt to arise between



patient and guardian, and to help in devising employment for those patients who are able to work. We desire once more to record our indebtedness to the Commonwealth Fund who, through the Child Guidance Council, have lent without charge trained mental health workers for an experimental period. We are convinced that in the long run the employment of trained social workers is remunerative expenditure. Without their aid boarding-out is almost impossible and out-patient clinics, the simplest and most effective form of preventive measures, are robbed of much of their value. It is significant that in no case where social workers have been employed has the experiment failed. So far as we are aware no medical superintendent has experienced the advantages of the assistance of trained workers without being convinced of the necessity of making them a permanent part of the staff.

#### *Admission Hospitals.*

Good progress continues to be made in the provision of separate admission hospitals with their ancillary convalescent villas. As we have pointed out in previous Reports, an adequately equipped admission unit and treatment centre is an essential part of a complete mental hospital, and the operation of the Mental Treatment Act has emphasized the necessity for these units. If voluntary patients can be encouraged to seek treatment at an early stage when they can co-operate with the doctor, the chances of recovery are greatly enhanced. In theory, the advantages of treatment in the early and hopeful stage is not disputed; indeed, it is indisputable. But, in practice, it is not sufficiently recognized that early cases cannot be expected to enter the overcrowded mixed admission and sick wards such as still exist in too many mental hospitals. All new admissions should go to an admission hospital; but after the necessary period of bed treatment for purposes of physical examination and observation is over, many voluntary patients suffering from mental disorders of the milder type may with advantage be transferred to convalescent villas. If all new admissions are to be received into the admission unit, it follows that provision must be made for the isolation of noisy and excited patients so that they do not disturb other patients. This can in general best be secured by providing single rooms at the extreme ends of the building, and we are glad to record that this principle has been followed in the design of most recent units.

Where the admission hospital is situated, as it should be, well away from the main buildings with entirely separate access, there is much to be said for the practice which has already been adopted in a few cases; e.g., at Wantage House, St. Andrew's, of giving the admission hospital a name of its own. There are those who say that this is a mere concession to prejudice, a distinction without a difference. We do not share this view,



and experience convinces us that it will help to attract voluntary patients and encourage earlier admissions if the patients and, perhaps an even more important point, their relatives feel that treatment is being offered to them without the necessity of having to enter institutions still unfortunately too often associated in the public mind with permanent mental disorder. The problem of encouraging early treatment cannot be solved without securing the confidence of the patient and of his family, and any measure which will conduce to this end is worthy of careful consideration.

### *Mental Treatment Act.*

Progress in the application of the Mental Treatment Act during the year has not been as rapid as we could have wished. There is a slow but steady improvement in the number of voluntary admissions to public mental hospitals, and the total for the year, excluding the Maudsley Hospital, was 2,961 as compared with 2,295 in 1932. There has also been a gratifying increase in the number of out-patient clinics, and this in time is bound to be followed by an increasing voluntary admission rate. The total number of out-patient clinics associated with public mental hospitals had grown to 118 by the end of 1933 ; but their distribution is very unequal, and there are still many areas in which they are either inadequate or non-existent. We recognize that the staffing of these clinics throws a growing burden upon the medical officers concerned. The work is exacting ; if it is to be done properly it needs considerable time, and in county areas the time necessarily spent in travelling has also to be taken into account. But experience of the working of the clinics only goes to confirm the view, if confirmation were needed of a proposition which is almost self-evident, that out-patient work conducted on sound lines and with the co-operation of local general practitioners is not only the surest way to encourage early in-patient treatment, where it is needed, but also reduces admissions by saving many from the necessity of seeking in-patient treatment at all. We are convinced that the system is economically sound, and we wish that it was more generally recognized by Visiting Committees that an addition to the medical staff to enable a full system of out-patient stations to be organized would be a sound investment.

Except in a few areas where special effort has been made, the number of temporary patients in public mental hospitals remains disappointingly small. The total number of rate-aided temporary patients admitted during 1933 was 298. Private patients admitted on a temporary basis amounted to 99. Excluding voluntary patients, the ratio of rate-aided to private patient admissions is 97 to 3. There is no reason whatever to suppose that the proportion of patients suitable for temporary treatment is any larger among private than among rate-aided



patients. If the proportion of temporary admissions of rate-aided patients corresponded to the proportion among private patients, the total temporary admissions in the rate-aided class would have been approximately 3,280 instead of an actual total of 298. In other words, the non-volitional paying patient has about 11 times as good a chance of admission without certification as the rate-aided patient. An analysis of cases shows that only a fifth of the temporary admissions require to be certified subsequently, and it follows that in round figures 2,400 persons were certified in 1933 who might, if advantage had been taken of temporary treatment, have escaped certification altogether. It is not for us to attempt to apportion the responsibility, but, wherever the blame lies, we cannot help feeling that a grave hardship is inflicted on persons who are certified needlessly. We are aware that there is a disposition in some quarters to argue that the difference between certification and temporary treatment is merely a difference of labels, and that the fact of admission to a mental hospital carries the same social consequences whatever the legal procedure of admission. At the moment of admission this may be true, but after discharge it certainly is not. If only local authorities realized what escaping certification may mean, for example, to a woman compelled to enter a mental hospital by some transitory mental disturbance following childbirth, they would make more effort than they do at present to give non-volitional patients the relief which Parliament intended them to have. At present, except in a few areas, the rich enjoy this relief and the poor do not. It cannot be denied that there are difficulties in working Section 5 of the Mental Treatment Act, but if these difficulties can be successfully overcome in areas so differently circumstanced as Swansea and Oxford, they can be overcome elsewhere.

### *Occupation Therapy.*

Occupation therapy is developing to an increasing extent, and in August we issued a memorandum\* based on the report of the Office Committee to which reference was made in our last Report. There is, we believe, a growing recognition that many patients hitherto regarded as unemployable can be employed and will benefit both physically and mentally by their employment. But there is still in some quarters a reluctance to believe that employment has any real value unless it is obviously and directly remunerative. If chronic patients are capable of remunerative work, we agree that in general it is right that they should be employed in whatever manner is best calculated to enable them to contribute to the cost of their maintenance. But in the case of new admissions, and, indeed, of all patients whose condition

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\* Memorandum on Occupation Therapy for Mental Patients. H.M. Stationery Office. 6d. net.



is still capable of improvement, the choice of occupations must be determined primarily by therapeutic rather than economic considerations. The fact that a particular patient is apparently content to go on doing a routine job for an indefinite period may result in ignoring the possibility that a change to a less monotonous task might be definitely beneficial. Moreover, it is unfair to assume that the patient who performs a simple piece of work competently is not capable of better work. Any work is better than idleness, but an occupation which has ceased to interest the worker and has become purely mechanical has little therapeutic value. Variety of occupation is an important element in maintaining interest, and patients who are capable of improvement, even though complete recovery may be unlikely, will often benefit by a change and still more by the consciousness of progress. There are, of course, patients whose native capacity was always so limited as to restrict them to a limited range of routine occupations. But there are many others who suffer at present from being kept too long at types of work which do not interest them or demand the degree of attention necessary to bring out their latent possibilities. To some this may sound a counsel of perfection, but we are convinced that at present far too little trouble is taken to study the individual needs of patients in allotting work to them. Carefully graded and selected occupation is a valuable part of treatment, and the good of the patient must always be the first consideration. To allow the choice of work to be determined by the immediate effect on the maintenance account is a short-sighted policy. Even if the test applied is purely financial, and no hospital of any kind ought to be judged by merely financial tests, to improve the patients' condition yields a better return than a small immediate saving on the maintenance rate. Indeed, as we have pointed out in previous Reports, the maintenance rate is a most delusive test of efficiency. It is far more economical to increase the discharge rate than to diminish the maintenance rate.

A new development which we have watched with interest and which we have done our best to encourage is the training through musical exercises and dancing now adopted in many hospitals. It involves very little expense. Even the provision of suitable costume, though it is desirable, is not essential. There is rarely any great difficulty in finding a nurse to play the piano, and if no pianist can be found a gramophone can be used as a substitute. The results have been uniformly good. The drill gives patients a new interest in life. It increases vitality and helps to build up a new self-respect and even in some cases lessens the introversion of patients who had been regarded as hopelessly "shut in." Patients' dances have long been popular in mental hospitals, but exercise to music has been found to appeal to patients who could not be induced to take any part in dances and indeed are not capable of doing so.



At first no special drill costume is needed, but as the classes progress the adoption of some simple but suitable dress for the women, which it is not beyond the ingenuity of the workroom to produce, is generally found to be helpful and it is inexpensive. While many patients will be improved by drill and simple physical exercises, it is particularly valuable for those who cannot be roused from their lethargy in other ways.

### *Dress.*

In our last Report we emphasized the need of giving patients, particularly women patients, greater variety in clothing and patterns approximating to those worn by normal people. It is gratifying to be able to record that there has been in many mental hospitals a marked improvement in the dress of the women patients. There are still, however, many hospitals where the underclothing is not marked to individual patients, a practice now almost universally adopted in mental deficiency colonies. Although it demands a larger stock of clothing and some rearrangements in the laundry there can be no doubt that it is worth while both as a sanitary measure and as a means of encouraging pride in personal possessions.

In the case of male patients, though the use of pyjamas cannot always be encouraged, since the cords might offer too great a temptation in suicidal cases, it is satisfactory to note an increasing adoption of nightshirts for the male patients. The practice, still in vogue in some mental hospitals, of allowing male patients to wear the same underclothing day and night is unhygienic and in our view unnecessary. It is sometimes argued that such patients are merely doing in the hospital what they were accustomed to do in their own homes before admission. Even if this generalization is true, it only applies to a few patients. A bad habit is none the less bad because it was formed before admission, and experience has shown that with a little trouble most patients can be taught to appreciate decent nightwear and are all the better for doing so.

### *Parole.*

It is usual in Commissioners' entries to record the number of patients who are allowed parole, and it is impossible to read many entries without being struck by the marked divergence between the proportion of patients granted this privilege in different hospitals. In a matter of this kind rigid uniformity is not possible nor desirable. The size and position of the estate, the lay-out of the buildings, and other peculiarities of position or design may all affect the extent to which parole can be given. But when every allowance has been made for variation in local factors, the margin between the hospitals which are most generous and the least generous in this respect is far too wide to be explained in this way. This is a matter in which the personal equation



enters, and superintendents who are temperamentally cautious will naturally give parole less readily than others who are more prepared to take reasonable risks. For the reassurance of the cautious we may say that even where parole is most freely given, instances of failure are comparatively rare. Parole is valuable not only for its effects on the patients who are given this measure of freedom, but also because it gives other patients something to look forward to and is an inducement to good behaviour. Restrictions on personal liberty and freedom of movement are inevitable in any mental hospital, but they ought not to be emphasized if this can be avoided. In our view the freest measure of parole which the circumstances of the hospital will permit should be encouraged. It adds much to the contentment of the better class of patient and it is rarely abused. In a matter of this kind occasional mistakes are bound to occur, but it is better to err on the side of giving too much freedom than too little. "Safety first" is not the best motto for mental hospitals.

#### *Interchange of Patients.*

Most mental hospitals from time to time have a patient whom they would gladly send elsewhere. Such a transfer would often be as much in the interest of the patient as of the hospital. A patient of a troublesome cantankerous type will often do better in new surroundings and in different hands. Single transfers in cases such as these are frequently difficult to arrange. But if neighbouring hospitals could enter into reciprocal arrangements for the exchange of patients from time to time, there would be no necessity for troublesome financial adjustments, and a mutual interchange of these difficult cases would be beneficial to all concerned. Provided such interchange arrangements were made between two hospitals not so far apart as to prevent the relatives from visiting, we believe that the experiment is well worth trying. We recognize that there are some hospitals so situated as to make any interchange difficult to work, but we are convinced that there are many cases in which the system would be practicable and we hope it will be tried. Having regard to the experimental nature of this suggested exchange of patients, we should be glad if medical superintendents who try the experiment would let us know the results.

#### *Enquiries from Relatives of Patients.*

Several instances have come to our notice recently which suggest that some hospitals, possibly only a few, do not always take sufficient trouble in answering enquiries from relatives of patients. Relatives are not always reasonable, and often they cannot understand that distressing manifestations are a normal feature of certain mental disorders; nor do they always appreciate the necessity for precautions which may be indispensable but



are none the less irritating. But it must be remembered that they are often in great distress of mind and, however unwise their requests or suggestions may be, they are made in what is believed to be the interest of the patient. The use of printed forms, except as a mere acknowledgment, is to be deprecated, and the practice of sending replies over a printed or a facsimile signature is not calculated to allay anxiety. Before any reply can be drafted the condition of the case will have been reported by a medical officer, and the reply which embodies the substance of the report, or so much as it is wise to communicate, will have been seen, or certainly ought to have been seen, either by the superintendent or his deputy. To sign the letter does not add materially to the labour which such correspondence involves, and it avoids any suggestion of indifference or discourtesy. Many complaints, which on investigation prove to be without substance, would never have been made if a little more trouble had been taken to explain the circumstances of the case to the relatives.

#### MENTAL DEFICIENCY.

##### *Accommodation for Mental Defectives.*

On the mental deficiency side the event of the year was the opening in October by the Minister of Health of the Hertfordshire colony at Cell Barnes. This is only the second complete colony to be provided by a local authority, the first being Hortham. It is interesting to note that the actual cost of building, including all engineering services but excluding furnishing and architects' fees, worked out at £299 a bed at Cell Barnes with 600 beds and £295 a bed at Hortham with 610 beds. These figures are much below the cost of constructing a new mental hospital, and they confirm the view that where the total number of beds required is in the neighbourhood of 500 or over, it is cheaper and more satisfactory to build on a clear site than to add villas and ancillary buildings to an adapted mansion.

The total number of new beds in certified institutions provided by local authorities during the year was 2,254. This figure compares favourably with previous years and we are glad to record that in spite of financial difficulties steady progress continues to be made with the provision of institutional accommodation for defectives. But the total of institutional beds available for defectives at the end of 1933 amounted to 35,441, of which Local Authorities had provided 15,426; this is still very far from meeting the need, and as will be seen by reference to the table given on page 61 there is a wide variation between different authorities in the scale on which beds are provided. Too many authorities are still content to rely on obtaining beds in charitable institutions, or, in default of other accommodation, to allow lower grade defectives who can be certified under the Lunacy Acts to occupy relatively costly mental hospital



beds. In this connection we learn with satisfaction that the Lancashire Mental Hospitals Board are taking active measures to enlarge Brockhall with a view to relieving the pressure on the bed accommodation of the Lancashire mental hospitals by transferring to Brockhall mentally defective patients who are found to be suitable for colony treatment.

*Value of Scouting and Guiding in the Training of  
Mental Defectives.*

We desire once more to emphasize the great value of scouting and guiding in the training of mental defectives. The authorities who are responsible for the control of this movement have been most helpful in devising special tests suitable to the needs and the capacity of defectives, and we are glad to find that groups of scouts and guides, and often of wolf cubs and brownies, rovers and rangers have been established in a steadily increasing number of colonies and other certified institutions. In spite of the difficulties of adopting scouting and guiding in some of the smaller units, we would urge all institutions for high grade defectives to take part in this movement. Scouting and guiding provide a discipline of the greatest value in the training of defectives, and apart from their recreational and disciplinary value they help to vary the monotony of institutional life, while at the same time they increase self-confidence and self-respect and foster the sense of independence which is so sadly lacking in most defectives.

Folk dancing, too, is a most useful feature. Defectives often have a marked sense of rhythm and it is encouraging to find how the most unpromising material will improve with the stimulus of careful training and judicious competition. There are many records of success of institution troops against normal competitors, and we are particularly pleased to record that a troop of girl guides at the State Institution at Rampton has been successful in a folk dancing contest against normal competitors. Their pride in their success is pathetic to see, and though successes of this kind may seem too trifling to record in our Report, we are convinced that such successes will do much to remove the sense of inferiority from which many defectives suffer.

*The State Institution.*

The State Institution at Rampton has now practically reached the limit of expansion. It might be possible, and it may become desirable, to add another children's villa, but happily there is at present no indication that this is necessary. The accommodation for adults cannot be increased with the area of land at present available, and even with a larger estate, further expansion would be unwise in view of the special character of the inmates. As, however, the demand for accommodation continued to increase,



though the rate of increase is happily diminishing, there was no alternative but to provide beds elsewhere. It was accordingly decided, with the concurrence of the Ministry of Pensions, to resume possession of Moss Side, Maghull, near Liverpool, which had been acquired by our Board before the war but had been used as a Military Hospital from 1914 to 1919 and had, since 1920, been lent for the reception of epileptics under the care of the Ministry of Pensions. Moss Side, which accommodates 150 male and 156 female patients, was reopened as a State Institution in October and 50 male patients and 51 female were transferred from Rampton to Moss Side. Warwick, which was in many ways unsuitable for this purpose, has now been given up entirely. This rearrangement has eliminated the overcrowding on the male side at Rampton, which was becoming serious, and it has enabled badly needed workshop accommodation, which had been temporarily converted, to revert to its original use. There was no actual shortage of accommodation for women at Rampton, but for the sake of economy in administration a sufficient number of women patients were transferred to Moss Side to provide workers for the kitchen, laundry and sewing room. Dr. Gostwyck, formerly the Deputy Superintendent at Rampton, has been appointed to be Superintendent at Moss Side. The two establishments will continue to be worked as one unit and staff will be transferred as may be necessary from time to time from one place to the other.

It is often asked how long the demand for beds in the State Institution will continue to increase, and the question is difficult to answer. At present the average age is abnormally low and the death-rate correspondingly small. As the age distribution approximates more nearly to that of the general population the death rate will rise until it reaches the normal level. It would not, indeed, be surprising if ultimately the death rate exceeded that of the general population, since even high grade defectives, and most Rampton patients are high grade, have a shorter expectation of life than normal people. But as the new admissions are, with comparatively few exceptions, quite young, the intake of young patients year by year will tend to keep down the average age, though with a falling admission rate and a rising total, the effect of the intake on the average age will steadily diminish. It is possible that with the growth of colonies for defectives the training given to them may save some from deteriorating into the violent or dangerous type for whom the State Institution is intended. In the last four years there has been a falling off in the admission rate, but it would be premature to assume that this reduction will be permanent. So far as the figures go they are encouraging, but they are not conclusive. The most significant change is the steady fall in the proportion of cases sent by the courts, which now amounts to little over 50 per cent. of the total admissions. This suggests that an



increasing number of defectives of the potentially criminal type are being dealt with in certified institutions until their dangerous or violent propensities make it impossible to retain them there any longer. This is all to the good, since it means that defectives of a markedly anti-social type are now being segregated at a much earlier age than was formerly the case and before they have become really dangerous. At the same time it is not yet possible to say when a state of stable equilibrium will be reached and the admissions will be balanced by deaths and discharges.

### *Sterilization of Mental Defectives.*

The Departmental Committee on Sterilization, whose appointment was mentioned in a previous Report, have now issued their report. The Committee, presided over by the Chairman of our Board, are unanimous in their recommendations. They are opposed to any compulsory measure but they propose that sterilization on a voluntary basis should be legalized, subject to stringent safeguards, in the case of persons who are mentally defective or who have suffered from mental disorder, persons suffering from grave physical disorders of a transmissible character, and also persons who, though not themselves sufferers, can be shown to be likely to transmit mental defect or disorder or grave physical defect. This latter class may be described shortly as "carriers." This is not the place to discuss the Committee's findings and recommendations in detail, but we would draw attention to their view, which we share, that sterilization, while it would be of value as a supplementary measure, cannot be a substitute for the provision of institutional beds. The Committee also make recommendations for much needed research into the causation of mental defect and disorder, and their recommendations on this point are now being discussed with the Medical Research Council, who have reconstituted their committee on research into mental disorders. Professor Adrian, himself a member of the Council, has accepted the chairmanship of the new committee on which our Board will be represented by Sir Hubert Bond and Dr. E. O. Lewis.

### *Death of Miss Dendy.*

By the death of Miss Mary Dendy on the 9th May, 1933, there passed away one of the pioneers of the better care and treatment of mental defectives. Her whole life was devoted to the work, and no woman had done more to advance the cause which she had so much at heart. In 1898 Miss Dendy founded the Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded, and it was mainly through her efforts that the funds necessary for the foundation of the Sandlebridge Colony were raised. When the Board of Control was appointed in 1913 Miss Dendy became the first woman Commissioner, and she

held office until she retired on the ground of age in January, 1921. She devoted the remainder of her life to the work at Sandlebridge and almost up to the end she continued to display astonishing activity. Miss Dendy held her views tenaciously and she expounded them with vigour, and all who worked with her could not fail to recognize her immense experience or to admire her unceasing devotion to the task to which her whole life was dedicated. While Miss Dendy did much useful work as a member of our Board for over seven years, her main achievement was the development of Sandlebridge. Sandlebridge is, and will long remain, the best memorial to a noble and unselfish life, and we are glad that the Society has decided, in order to perpetuate her name, that the institution shall, in future, be known as the "Mary Dendy Home."



**I.—MENTAL DISORDERS.**

(Lunacy and Mental Treatment Acts, 1890 to 1930.)

**NUMBERS UNDER CARE.**

On 1st January, 1934, the number of persons suffering from mental disorder notified as under care in England and Wales was 150,266, an increase of 1,491 during the preceding year; the average annual increase for the five years ending 1st January, 1934, being 1,636. It is desirable again to draw attention to the facts that numbers relating to voluntary and temporary patients are now included throughout this section of the Report; and that, for the purpose of comparison, the numbers for the years prior to the operation of the Mental Treatment Act, 1930, have been corrected by the inclusion of voluntary cases, which had until then not been included.

The percentage distribution of the sexes—males 44·2, females 55·8—is the same as a year ago.

The increased number of notified patients has no necessary connexion with the incidence of mental disorders in the general population, being merely the increase shown by the excess of the admissions over the combined deaths and discharges. It is desirable to emphasize this fact on account of the erroneous deductions that are sometimes drawn from such increases.

**CLASS, STATUS AND DISTRIBUTION.***Class.*

*Private* patients on 1st January, 1934, numbered 14,995 (males 8,428, females 6,567). There were increases of 108 and 6 in the voluntary and temporary cases respectively, with a decrease of 310 in the certified cases, yielding a net decrease of 196 in this class. Included here are 4,918 Service and ex-Service patients—76 fewer than a year ago.

Patients in the Naval and Military Hospitals (Yarmouth 221, Netley 45) are also included among the private patients, as are the 32 persons found of unsound mind by inquisition who were resident in institutions. There were in addition 74 persons (males 41, females 33) so found by inquisition who, not being resident in institutions, are not notified to us and so do not fall within the scope of our statistics. The total number of these inquisition cases continues to show a steady decrease year by year, due to the lessened use made of this mode of procedure.

*Rate-aided* patients on 1st January, 1934, numbered 134,382 (males 57,383, females 76,999) or 89·4 per cent. of all the notified patients. They increased by 1,692 during 1933, as compared with an average annual increase of 1,745 during the last five years. There were increases of 557 in the voluntary, 10 in the temporary, and 1,125 in the certified patients.

# SUMMARY OF PERSONS SUFFERING FROM MENTAL DISORDER, 1ST JANUARY, 1934.

A.—ARRANGED ACCORDING TO CLASS.

WHERE MAINTAINED on 1st January, 1934.	PRIVATE.			RATE-AIDED.			CRIMINAL.			TOTAL.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
In Institutions provided by Local Authorities :—												
County and Borough Mental Hospitals	6,042	3,037	9,079	49,158	65,680	114,838	42	18	60	55,242	68,735	123,977
Other Premises ... ..	25	20	45	69	116	185	—	—	—	94	136	230
In Registered Hospitals ... ..	945	1,475	2,420	—	—	—	2	—	2	947	1,475	2,422
In Licensed Houses :—												
Metropolitan ... ..	368	713	1,081	28	30	58	—	—	—	396	743	1,139
Provincial ... ..	690	1,033	1,723	—	—	—	—	—	—	690	1,033	1,723
In Hospitals and Nursing Homes approved under the Mental Treatment Act :—												
Hospitals ... ..	—	—	—	—	—	—	—	—	—	—	—	—
Nursing Homes ... ..	10	32	42	—	—	—	—	—	—	10	32	42
In Naval and Military Hospitals ... ..	266	—	266	—	—	—	—	—	—	266	—	266
In Criminal Lunatic Asylum (Broadmoor)	—	—	—	3	—	3	620	207	827	623	207	830
In Public Assistance Institutions and Municipal General Hospitals ... ..	—	—	—	6,507	8,659	15,166	—	—	—	6,507	8,659	15,166
In Private Single-Care ... ..	82	257	339	—	—	—	—	—	—	82	257	399
In Outdoor Relief... ..	—	—	—	1,618	2,514	4,132	—	—	—	1,618	2,514	4,123
TOTAL ... ..	8,428	6,567	14,995	57,383	76,999	134,382	644	225	887	66,475	83,791	150,266
Increase during 1933												
... { Private												
Rate-aided ... ..	141*	55*	196*							98*	7*	105*
Criminal ... ..	877	815	1,692							918	827	1,745
Total ... ..	734	757	1,491							815	821	1,636

\* *Decrease.*



SUMMARY OF PERSONS SUFFERING FROM MENTAL DISORDER, 1ST JANUARY, 1934.

B.—CLASSIFIED ACCORDING TO STATUS.

WHERE MAINTAINED on 1st January, 1934.	VOLUNTARY.			TEMPORARY.			CERTIFIED.			TOTAL.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
In Institutions provided by Local Authorities :—												
County and Borough Mental Hospitals	996	1,019	2,015	46	116	162	54,200	67,600	121,800	55,242	68,735	123,977
Other Premises ...	94	136	230	—	—	—	—	—	—	94	136	230
In Registered Hospitals ...	196	282	478	6	26	32	745	1,167	1,912	947	1,475	2,422
In Licensed Houses :—												
Metropolitan ...	67	112	179	3	7	10	326	624	950	396	743	1,139
Provincial ...	93	152	245	1	17	18	596	864	1,460	690	1,033	1,723
In Hospitals and Nursing Homes approved under the Mental Treatment Act :—												
Hospitals ...	—	—	—	—	—	—	—	—	—	—	—	—
Nursing Homes ...	9	29	38	1	3	4	—	—	—	10	32	42
In Naval and Military Hospitals ...	1	—	1	—	—	—	265	—	265	266	—	266
In Criminal Lunatic Asylum (Broadmoor)	—	—	—	—	—	—	623	207	830	623	207	830
In Public Assistance Institutions and Municipal General Hospitals ...	—	—	—	—	—	—	6,507	8,659	15,166	6,507	8,659	15,166
In Private Single-Care ...	1	7	8	—	—	—	81	250	331	82	257	339
In Outdoor Relief ...	These persons are not classifiable under the above headings, but for convenience are included among the Certified.			—	—	—	1,618	2,514	4,132	1,618	2,514	4,132
TOTAL	1,457	1,737	3,194	57	169	226	64,961	81,885	146,846	66,475	83,791	150,266
OF TOTAL { Private ...	554	795	1,349	21	89	110	7,853	5,683	13,536	8,428	6,567	14,995
{ Rate-aided ...	903	942	1,845	36	80	116	56,444	75,977	132,421	57,383	76,999	134,382
{ Criminal ...	—	—	—	—	—	—	664	225	889	664	225	889

*Criminal* patients on the same date numbered 889 (males 664, females 225), a decrease of 5 during the year.

*Transfers from Class to Class.*—During 1933, 699 rate-aided patients (males 341, females 358) were transferred to the private class; 251 private patients (86 males, and 165 females) were transferred to the rate-aided class; and 44 criminal patients were retained and classed as rate-aided patients on the expiry of their sentences or on their discharge as criminals.

### *Status.*

On the 1st January, 1934, at the end of the third year of the operation of the Mental Treatment Act, 1930, the following patients were under care in each status:—

Status.					Males.	Females.	Total.
Voluntary	...	...	...	...	1,457	1,737	3,194
Temporary	...	...	...	...	57	169	226
Certified	...	...	...	...	64,961	81,885	146,846

*Regradings to another Status.*—During the year, 821 changes in status within the institutions took place as follows:—

From—					To Voluntary.	To Temporary.	To Certified.
Voluntary	...	...	...	...	—	38	247
Temporary	...	...	...	...	127	—	94
Certified	...	...	...	...	307	8	—

### *Distribution.*

The distribution of all patients on the 1st January, 1934, can be seen by reference to the two Summaries (A and B) on pages 15 and 16, but it may be pointed out that over 82 per cent. of them were resident in County and Borough Mental Hospitals. Further, 63 per cent. of the voluntary patients were resident in these institutions. On the other hand, the voluntary patients in Registered Hospitals and Licensed Houses formed 17·1 per cent. of the patients under care in those establishments, while the similar percentage for County and Borough Mental Hospitals was 1·6.

### MOVEMENT OF PATIENTS.

*Admissions, Discharges, Transfers to other Care, and Deaths in 1933.*—Owing to the absence of detailed information of the movement of the persons suffering from mental disorder in Public Assistance Institutions and Municipal General Hospitals,



and of those in receipt of Outdoor Relief, particulars as to the persons in these forms of care are not included below.

The subjoined statement includes patients of each status (voluntary, temporary and certified) :—

Resident on 1st January	...	...	...	...	129,738
Direct Admissions	...	...	...	...	25,659
Indirect Admissions (excluding regradings)	...	...	...	...	2,420
					<hr/>
					157,817
					<hr/>
Discharged and Departed—					
Recovered	...	...	...	...	8,520
Relieved	...	...	...	...	5,103
Not Improved	...	...	...	...	1,297
*By operation of law	...	...	...	...	184
“ Not now Insane ”	...	...	...	...	16
Transferred (under order) to other care	...	...	...	...	2,321
Died	...	...	...	...	9,408
Remained at end of year	...	...	...	...	130,968
					<hr/>
					157,817
					<hr/>

The daily average number resident was 129,712 (males 57,756, females 71,956)—the proportion of those resident in County and Borough Mental Hospitals being 94·6 per cent.

Direct admissions were 25,659 (males 11,439, females 14,220) of whom 87·7 per cent. were admitted to County and Borough Mental Hospitals. The proportion per cent of these admissions in each status was—voluntary, 19·2 ; temporary, 2·1 ; and certified, 78·7.

The ratio of admissions per 10,000 of the population (aged 16 years and upwards) of England and Wales was 8·47 (males 8·01, females 8·87) and shows a decrease of 0·02 on the previous year. The ratio of admissions of certified and temporary patients was 6·83.

First admissions during 1933 numbered 19,976 (males 9,137, females 10,839) or 77·9 per cent. of all the direct admissions. Of these first admissions 3,703 (18·5 per cent.) were voluntary patients, 478 (2·4 per cent.) were temporary, and 15,795 (79·1 per cent.) were certified.

Discharges and Departures—that is, certified and temporary patients discharged, and voluntary patients who departed, from statutory care (as recovered, relieved or not improved), numbered 14,920 (males 6,254, females 8,666). Of these, 8,520 were dis-

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\* Either by reason of irregular admission documents, lapsing of reception orders (s. 38, Lunacy Act, 1890), or discharges under s. 85.



charged as recovered, yielding a recovery rate, calculated on the direct admissions, of 33·2 (31·7 for males, 34·5 for females). The discharges as relieved and not improved numbered respectively 5,103 and 1,297; and if these and the 16 discharged on admission as not now insane and the 117 cases discharged after escape (section 85) are added to the recoveries, it shows that the total absolute discharges and departures during the year were 58·7 per cent. of the direct admissions. The percentage distribution of these absolute discharges and departures was—certified, 70·9; temporary, 1·6; voluntary, 27·5.

*Deaths* numbered 9,408 (males 4,385, females 5,023). They were 337 less than in the previous year; and the death-rate (7·3 per cent. of the daily average number resident) was 0·3 below the rate for 1932. The rate for males was 7·6 per cent.; and for females 7·0.

*Transfers to Other Care, etc.*—During the year 2,420 patients were transferred to another institution or to or from single-care, or were (in a few instances) indirect admissions following discharge by operation of law. Such cases, as well as the regradings detailed on page 17, are technically termed *indirect* admissions and call for no further comment.

*Numbers remaining under Care.*—The number of patients remaining under care (with the exception of those in Public Assistance Institutions and Municipal General Hospitals and those in receipt of Outdoor Relief) on the 1st January, 1934, was 130,968 (males 58,350, females 72,618), an increase of 1,230 patients during the year.

## COUNTY AND BOROUGH MENTAL HOSPITALS.

(One hundred in number.)

### 1. Accommodation.

On the 1st January, 1934, accommodation in recognized bed-space was provided in County and Borough Mental Hospitals for 123,134 patients (males 54,841, females 68,293), and there were on the books of these hospitals 387 males and 456 females in excess of this provision.

A list of these hospitals will be found in Appendix A in Part II.

The deficiency of accommodation disclosed by the foregoing figures is discussed in the Introductory to this Report (see page 1), but it may be mentioned here that during 1933, we approved plans of proposals which are estimated to provide 2,211 additional beds. Details of these proposals are set out below.

In addition, it is estimated that 363 beds in London County Mental Hospitals will be released as a result of the adaptation

of an annexe, at Leavesden Residential Schools, for the reception of patients discharged under Section 25 of the Lunacy Act, 1890.

Mental Hospital.	Nature of Scheme.				No. of patients' beds provided
Essex :					
Brentwood ...	Admission hospital	...	...	...	105
do. ...	Conversion of library into dormitory...				16
do. ...	Temporary buildings for 40 male patients				40
Gloucester ...	Alterations to laundry and unit for voluntary patients.				23
Hants :					
Knowle ...	Admission hospital	...	...	...	70
Hereford ...	Adaptation of :—				
	(1) Farmhouse	...	...	...	10
	(2) Staff blocks	...	...	...	11
Herts ...	Female block, 3 villas, adaptation of isolation hospital and adaptation of Medical Superintendent's old house.				287
Kent :					
Chartham ...	Adaptation of Medical Superintendent's old house.				17
Lancashire :					
Rainhill ...	Adaptation of Assistant Medical Officer's old house.				31
London C. :					
Banstead ...	Nurses' home	...	...	...	103
Hanwell ...	Conversion of old brewery into quarters for male staff.				22
Northampton C.	Admission hospital and male convalescent villa.				75
Staffs :					
Stafford ...	Two convalescent villas	...	...		52
Burntwood ...	Admission hospital, two convalescent villas and nurses' home.				122
Sussex, East ...	Temporary isolation hospital			...	16
Warwick ...	Completion of nurses' home	...	...		45
Yorks, W.R. :					
Menston ...	Adaptation of attendants' residence	...			29
Wadsley ...	Two convalescent villas	...	...		38
Wakefield ...	Adaptation of nurses' residence			...	70
Storthes Hall	Adaptation of attendants' residence	...			22
Birmingham :					
Winson Green	Alterations to day-rooms and dormitories M. ward 9.				3
Hull ...	Villa for female patients	...	...		40
Nottingham City	Admission hospital, two convalescent villas.				84
Southend and East Ham.	New mental hospital	...	...	...	880



2. *Agreement to Unite.*

An Agreement to Unite under Section 242 of the Lunacy Act, 1890, entered into between the Counties of Kesteven and the Soke of Peterborough and the Borough of Grantham has been approved by our Board. Under the terms of the Agreement the mental hospital at Rauceby is, as from the 1st April, 1933, owned jointly by these authorities.

3. *Numbers under Care.*

On the 1st January, 1934, the County and Borough Mental Hospitals contained 123,977 patients, as follows:—

Status.					Males.	Females.	Total.
Voluntary	...	...	...	...	996	1,019	2,015
Temporary	...	...	...	...	46	116	162
Certified	...	...	...	...	54,200	67,600	121,800
Total	...	...	...	...	55,242	68,735	123,977

The above numbers show increases of 615, 23, and 710 voluntary, temporary and certified patients respectively.

The number of patients in each class was—private, 9,079 ; rate-aided, 114,838 ; criminal, 60.

4. *Movement of Patients.*

*Direct Admissions.*—During 1933 there were 22,493 direct admissions as shown below:—

Status.					Males.	Females.	Total.
Voluntary	...	...	...	...	1,341	1,620	2,961
Temporary	...	...	...	...	136	261	397
Certified	...	...	...	...	8,578	10,557	19,135
Total	...	...	...	...	10,055	12,438	22,493

As compared with the direct admissions in 1932, there was an increase of 666 in the voluntary admissions and of 60 in the temporary, while there was a decrease of 504 in those of the certified status, resulting in a net total increase of 222 in the direct admissions.

*First Attack Cases.*—Particulars of these admissions during 1933 are not yet available, but it may be stated that, of the direct admissions in 1933, nearly 23 per cent. (voluntary 28 per cent., temporary 11 per cent., and certified 22 per cent.) had previously been dealt with under the Lunacy and Mental Treatment Acts.

*Departures and Discharges.*—The following were the absolute departures and discharges during 1933 :—

At time of discharge.		Males.	Females.	Total.
Status.	Mental Condition.			
Voluntary	{ Recovered ...	500	729	1,229
	{ Relieved ...	373	403	776
	{ Not Improved	170	201	371
		2,376 (19·3%)		
Temporary	{ Recovered ...	28	58	86
	{ Relieved ...	24	36	60
	{ Not Improved	6	9	15
		161 (1·3%)		
Certified	{ Recovered ...	2,544	3,602	6,146
	{ Relieved ...	1,149	1,886	3,035
	{ Not Improved	264	318	582
		9,763 (79·4%)		
Total ...		5,058	7,242	12,300

The percentage of total discharges (recovered, relieved, and not improved) to the admissions was 54·7 and of recoveries alone was 33·2 (males 30·6, females 35·3).

*Deaths.*—During the year, 8,839 patients (4,143 males and 4,696 females) died.

The proportion per cent. of deaths to the daily average number of patients resident was 7·2 (males 7·6 and females 6·9). This was 0·4 below that of the previous year, and 0·3 below the mean percentage for the preceding ten years.

The number of post-mortem examinations was 5,600, being 63·4 per cent. of the deaths. The proportion of these examinations varied from 100 per cent. at Cumberland Mental Hospital and 90 per cent. or over at the Napsbury, Monmouth, Nottingham County, Burntwood, Cheddleton, Isle of Wight, Barnsley Hall, Wadsley, East Riding, and Leicester City Mental Hospitals to such a low percentage as 15·2 (Lancaster).

*Service Patients.*—On the 1st January, 1934, the number of Service patients resident in County and Borough Mental Hospitals was 4,299, a decrease of 55 during the year. On the same date there were also 378 ex-Service patients (16 less than a year previously), the cost of whose maintenance is defrayed by our Board from a special Exchequer grant (*see* 11th Report, page 31).

### 5. *Use of Voluntary and Temporary Treatment.*

County and Borough Mental Hospitals accommodate 82·5 per cent. of all mental patients notified as under care and receive 87·7 per cent. of admissions into the various forms of care. It is, therefore, important to take note of the progress these hospitals make in using the procedures for voluntary and tem-



porary treatment and the extent to which they thereby avoid resort to certification.

With respect to the admission of *voluntary* patients—the number of hospitals at which during 1933 no voluntary patient was received has fallen to 5 : this is a gratifying improvement upon the corresponding numbers, 14 and 17, for the two previous years. It is noteworthy that, with one exception at which 4 per cent. of the admissions were temporary patients, none of these five hospitals has received up to the end of 1933 either a voluntary or a temporary patient during the three years that the Mental Treatment Act has been in operation : however, at one of them an Admission Hospital and Convalescent Homes were completed at the close of 1933, and at another, corresponding units will be completed probably before the expiry of 1934. There is therefore ground for hoping that it will not be long now before the reproach of failure to take advantage of these important provisions in the Act will no longer attach to any of these hospitals.

*Proportion of voluntary admissions to total direct admissions.*

Percentage.	Hospitals.
Under 5	Berks, Parkside, Denbigh, Lancaster, Rainhill, Whittingham, Winwick, Bexley, Napsbury, Northumberland, Notts Co., Salop, Burntwood, Middlesbrough. (14 hospitals.)
5–9	Brecon, Cambridge, Cornwall, Cumberland, Brentwood, Glamorgan, Prestwich, Bracebridge, Banstead, Cane Hill, Colney Hatch, Hanwell, Long Grove, Northampton, Suffolk, Wilts, Powick, Barnsley Hall, Wadsley, Menston, Storthes Hall, Winson Green, Canterbury, Newcastle. (24 hospitals.)
10–14	Chester, Derby Co., Severalls, Park Prewett, Herts, Chartham, Claybury, Horton, Monmouth, Norfolk, Wells, Cotford, Warwick, Bristol, Croydon, Derby Boro', Hull, York City. (18 hospitals.)
15–24	Bucks, Devon, Dorset, Hereford, Barming Heath, Leicester and Rutland, West Park, Springfield, Oxford, Stafford, Cheddleton, Brookwood, Netherne, Wakefield, East Riding, Rubery Hill, Exeter, Gateshead, Newport (Mon.), Norwich City, Nottingham City, Plymouth. (22 hospitals.)
25–34	Gloucester, Knowle, East Sussex, Isle of Wight, North Riding, Brighton, Leicester City.
35–45	Sunderland, West Sussex, Ipswich, Swansea, Portsmouth.
55	Cardiff.

It is of some interest to note that it was at Cardiff where last year, with 47 per cent., the highest percentage was obtained. It may be desirable again to point out that at certain of the hospitals the reason that their proportion of voluntary admissions is not among these high figures is the specially large number of cases seen and treated to recovery at out-patient centres in general hospitals associated with the mental hospital. Mention should also be made of the percentages at Ewell (72), Scalebor Park (58), and the City of London (67), but these are not included in the series because of the special conditions which obtain at these three hospitals.

As regards *temporary* treatment—this procedure was not used in 34 hospitals: a small but welcome reduction of six upon the corresponding number in 1932. Its use was confined to less than 5 per cent. of the total direct admissions at 52 hospitals; at Gloucester, Cheddleton, Isle of Wight, Wakefield, Cardiff, Exeter, Hull and Ipswich the percentages ranged from 5 to 9; at Scalebor Park and Swansea the percentage was 10, at Oxford 11, at City of London 17, and at Derby Borough, where in the previous two years it was 26 and 34 respectively, it was no less than 42.

This use of voluntary and temporary treatment may be looked at from another angle, and with obvious advantage: namely, the extent to which it effects reduction in resort to certification. Expressed in terms of that reduction and in percentages of certified cases among the total direct admissions, the hospitals to which admission was obtained with the least frequent resort to certification were—City of London with 16 per cent., Scalebor Park (32), Cardiff (38), Derby Borough (45), and Swansea (47); and at neither Portsmouth nor Ipswich did the proportion reach 55 per cent.

#### 6. *Changes among Superintendents.*

##### *Carmarthen.*

Dr. John Richards whose health, to our regret, for some time had not been good, relinquished his post in April, 1933. Dr. Richards was appointed in June, 1907, having previously been Deputy Superintendent of the Leicestershire and Rutland Mental Hospital for seven-and-a-half years. Throughout the long period of 26 years during which Dr. Richards held office, he devoted his best energies to the duties of an admittedly difficult post.

After advertising the post, the Committee of Visitors appointed Dr. Sidney Davies (M.B.Lond., L.M.S.S.A., D.P.M.) who, for 12 years, had been a member of the medical staff of the North Wales Counties Mental Hospital at Denbigh.



*Durham.*

Dr. George Francis May, who for 30 years had been a member of the medical staff here, during the last 7 years of which he occupied the post of Superintendent, retired in March, 1933, under Section 11 of the Superannuation Act of 1909. Dr. May's solicitude for the welfare of the hospital and its patients was unflagging. He had taken, too, an active and helpful interest in the planning of the new Admission Hospital which is now approaching completion. During the War, Dr. May held a commission in the R.A.M.C. and saw active service abroad.

After advertising the post, the Committee appointed Dr. George Shepherd Wilson (M.B.Glas., D.P.M.) who, after some resident general hospital experience, had had nearly twelve years' experience as a member of the medical staff of the Lancashire County Mental Hospital at Prestwich.

*Worcestershire (Barnsley Hall)*

Dr. Percy Theodore Hughes, to our great regret, died on 29th March, 1933. Following upon valuable general hospital experience in Edinburgh and in the fever hospital service of the Metropolitan Asylums Board, he was for seven years a member of the medical staff of the London County Council's then newly opened mental hospital at Bexley. In September, 1906, he was appointed Superintendent of Barnsley Hall, the new mental hospital for Worcestershire, which he was called upon to open and to organize. To this task, in which he was highly successful, he was able to bring many valuable attributes: high professional attainments, which likewise were displayed in his work as Lecturer and Examiner in Mental Disorders in the University of Birmingham, a sympathetic insight into the troubles and difficulties of his patients, and musical and athletic gifts of no mean order which, with a singular charm of manner, were united in a strong personality. He was a member of the Departmental Committee appointed in 1922 on Dietaries in Mental Hospitals, in the work of which Committee he rendered valuable assistance. In the enlightened attitude which he took towards the future of Psychological Medicine, Dr. Hughes never wavered.

To fill the vacancy, the Committee of Visitors promoted Dr. Arthur Marcus Firth (M.A., M.D.Edin.). After some valuable general hospital experience at Edinburgh, Dr. Firth had been for ten years Pathologist and Assistant Medical Officer at Wadsley Mental Hospital; and since 1914 he had been Deputy Superintendent at Barnsley Hall.

*West Riding of Yorkshire*

The close of the year saw the retirement, under Section 11 of the Superannuation Act of 1909, of the Superintendents of three of the mental hospitals controlled by the West Riding Mental Hospitals Board.



*Wakefield.*

Professor Joseph Shaw Bolton, F.R.C.P. relinquished his post as Medical Director and Superintendent here last November : a position which, in succession to a series of distinguished occupants, he had filled with conspicuous ability for just 23 years. For an almost equal time he occupied the Chair of Mental Disorders in the University of Leeds. To Wakefield, in 1910, Dr. Bolton brought the fruit of fourteen years' valuable experience in the laboratories and wards of the mental hospitals at Rainhill, Claybury and Hellingly. He was already well-known for his researches, especially for his work on the histology of the human cerebral cortex. These and other studies he has continued to prosecute ; and we are indebted to him for many contributions to our Supplement, including his series of fourteen valuable annual reports on " Asylum Dysentery and Allied Infections." Wakefield Mental Hospital, by reason of its age and arrangement is a difficult institution to administer on modern lines : it has been, therefore, with all the greater satisfaction that we have observed the many improvements which, under Dr. Bolton's guidance, have been effected in means for classification and treatment, as well as in measures for the general care and comfort of the patients. In various other ways, too, for example, as President in 1928 of the Royal Medico-Psychological Association and in his development of courses for the Diploma in Psychological Medicine, Professor Bolton has exercised a wide influence for good not only in his own specialty but in the wider field of medicine.

Although the vacancy thus created was not filled during the period with which our Report deals, it is convenient to record here that, following upon advertisement of the post, the West Riding Mental Hospitals Board have appointed Dr. Cyril James Thomas (M.R.C.S.Eng., L.R.C.P.Lond., D.P.M.), who, after holding posts at St. Thomas's and Royal Bethlem Hospitals, had had twelve years' experience in the Lancashire mental hospitals, Lancaster and Whittingham, for the last  $2\frac{1}{2}$  years of which he held the position of Deputy Superintendent at Whittingham.

*Wadsley.*

Lt.-Colonel William James Nathaniel Vincent, C.B.E., M.D., who had been a member of the medical staff here for  $35\frac{1}{2}$  years, for the last 22 years of which he was Superintendent, retired at the end of last December. In all, he had given 41 years to mental hospital service.

Wadsley was opened as far back as 1872 ; its several additions have been made rather with the object of providing beds, than to meet particular medical requirements ; and hence to administer it in a manner demanded by modern methods of treatment has been no easy task. In his constant efforts to accomplish this,



Dr. Vincent has proved himself a very able administrator ; not least was his ability shown during the years the institution was used as The Wharnccliffe War Hospital and he was its Officer Commanding. The most recent development at his Hospital has been the provision, now approaching completion, of an Admission Hospital and Convalescent Homes, in the plans and arrangements for which Dr. Vincent took an active and particularly helpful interest. In his work, too, in connection with the organization of out-patient treatment for mental cases at The Royal Infirmary and at the Sheffield Royal Hospital, as well as in the Lectureship he has held in the University since 1911, Dr. Vincent has rendered good service to Psychiatry.

The vacancy created by his retirement was advertised ; and the Mental Hospitals Board appointed Dr. Arthur Pool (M.B.Liverp., M.R.C.P.Lond., M.R.C.S.Eng., D.P.M.) who, with valuable previous experience in general hospital appointments in Liverpool and nearly four years at Rainhill Mental Hospital, had been rather more than two years Senior Assistant Physician at The Retreat (York).

#### *Menston.*

Dr. Samuel Edgerley's retirement took effect on 31st December last, during which month he had entered on his fortieth year of mental hospital service, of which nearly 37 years were spent at Menston. He had been Superintendent for 27 years. Menston, when Dr. Edgerley joined its medical staff in 1897, was one of the most up-to-date hospitals of the day and had won a reputation which, ever since he became its second Superintendent in 1906, he has aimed, with exceptional single-mindedness, at enhancing. The conditions prevailing in the Hospital at the time of his retirement were testimony alike to the success of his efforts and to his solicitude for the welfare of his patients, of whose cases and individual needs Dr. Edgerley had a remarkably accurate knowledge.

Following advertisement of the vacancy, the Mental Hospitals Board promoted Dr. Robert Clive Walker (M.D.Edin.) who for 26½ years had been a member of the Menston staff, fourteen years as Deputy Superintendent.

#### *Shenley Mental Hospital (Middlesex).*

To the responsible post of Superintendent of this new mental hospital, the Visiting Committee of the Middlesex County Mental Hospitals have appointed Dr. George William Shore, O.B.E. (M.D.Lond., M.R.C.S.Eng., L.R.C.P.Lond., D.P.M., D.P.H.) who, for twelve years, had been a member of the medical staff of the Springfield Mental Hospital. Previously, Dr. Shore had been for a short while upon the staff of Long-Grove Mental Hospital and had held posts affording valuable general hospital experience at King's College Hospital.

7. *Causes of Death during 1932.*

The time that elapses between the receipt of the mortality statistics for any given year and the preparation for publication of our Report for that year is too short to permit of the compilation of a detailed summary and its adequate study. The subjoined table, therefore, refers to the deaths that occurred in County and Borough Mental Hospitals during 1932, the equivalent details relating to the year covered by this Report (1933) being not yet available. Some reference, however, will be made, in the section that follows this, to the mortality for 1933 in regard to certain diseases, particularly reference to which necessitates the production of the latest possible information. This procedure is in accord with that adopted during recent years.

*Causes of Death in the cases of all Patients in County and Borough Mental Hospitals who died during the year 1932. The daily average number of patients resident during the year 1932 was 121,261 (Males, 53,872 ; Females, 67,389).*

Cause of Death. (the numerals refer to the revised (1929) International List of Causes of Death as adapted by the Registrar-General for use in England and Wales.)						Number of Deaths.		
						Males.	Fem.	Total.
1 & 2.	Typhoid and paratyphoid fevers	...				5	20	25
10.	Diphtheria	...	...	...	...	1	5	6
11.	Influenza	...	...	...	...	43	108	151
13.	Dysentery	...	...	...	...	21	25	46
15.	Erysipelas	...	...	...	...	6	16	22
17.	Encephalitis lethargica	...	...	...	...	14	6	20
23.	Tuberculosis of the respiratory system					354	303	657
24-32.	Other forms of tuberculosis	...				36	43	79
48-53.	Cancer and other malignant tumours					137	212	349
59.	Diabetes	...	...	...	...	17	18	35
60.	Scurvy	...	...	...	...	1	—	1
62.	Pellagra	...	...	...	...	—	1	1
82.	Cerebral haemorrhage, apoplexy, etc.					218	253	471
83.	General paralysis of the insane	...				586	167	753
84.	Other forms of insanity	...	...			92	124	216
85.	Epilepsy	...	...	...	...	196	137	333
87.	Other diseases of the nervous system					36	39	75
91.	Acute endocarditis	...	...	...	...	14	23	37
92.	Chronic endocarditis, valvular disease					202	315	517
93.	Diseases of the myocardium	...				515	654	1,169
94.	Diseases of the coronary arteries, angina pectoris					49	29	78
95.	Other diseases of the heart	...	...			65	58	123
97.	Arterio-sclerosis	...	...	...	...	294	375	669
106.	Bronchitis	...	...	...	...	75	96	171
107-109	Pneumonia (all forms)	...	...			491	828	1,319
119 & 120.	Diarrhoea and Enteritis	...	...			16	21	37
130 & 131.	Nephritis	...	...	...	...	157	200	357
162.	Old Age	...	...	...	...	226	377	603
	All other diseases	...	...	...	...	364	393	757
	Violent deaths (including suicide)	...				42	35	77
Total						4,273	4,881	9,154



8. *Infectious diseases during 1933.*

The following table shows the incidence of certain infectious diseases among the patients and staffs of County and Borough Mental Hospitals during the year.

	Patients.			Staff.		
	M.	F.	T.	M.	F.	T.
Scarlet Fever ...	22	45	67	1	23	24
Diphtheria ...	5	5	10	—	4	4
Chicken Pox ...	10	1	11	—	—	—
Measles ...	1	1	2	—	—	—
Puerperal :						
Fever ...	—	3	3	—	—	—
Sepsis ...	—	4	4	—	—	—

The deaths from these infectious diseases were :—scarlet fever, two women patients and one female nurse ; diphtheria, one male patient, and puerperal sepsis, two women.

An outbreak of scarlet fever affecting 12 male and 19 female patients and 6 female nurses occurred, mostly in the first quarter of the year, at the Northampton Mental Hospital. There were no deaths.

*Tuberculosis.*

There were 1,026 pulmonary cases under treatment at the end of the year as well as 199 cases of other forms of tuberculosis. These figures taken together are equivalent to a prevalence in the mental hospitals of 10·0 cases of tuberculosis per thousand patients. On the same date five male and seven female members of the hospitals' staffs were under treatment for this disease.

*Incidence.*—The figures relevant to the number and ratio of fresh cases arising during the year are shown in the following table.

We have set out for purposes of comparison the corresponding particulars for the past decade.

In the mental hospital of the Isle of Wight there were no fresh cases, and in York City, Norwich, Ipswich, Gateshead, Canterbury, Winson Green (Birmingham), Scalebor Park (West Riding of Yorkshire) and Warwick only one case was notified during the year.

A relatively high incidence per thousand patients obtained in the following mental hospitals :—Swansea (27·8), Notts County (24·9), Stafford (23·9), Cumberland (23·4), Portsmouth (22·1), Plymouth (20·1), Beds. (18·2), Northumberland (17·4) and Bracebridge, Lincoln (16·9) ; the ratio of deaths per thousand patients for all mental hospitals was 5·8 but in these hospitals, with the exception of Swansea and Bracebridge, the ratio was relatively high. Deaths from tuberculosis account for some 8 per cent. of deaths from all causes occurring in our mental hospitals.

There is another aspect from which we may consider the figures of incidence and death to be important. It is noticed

Year.	Daily Average Number of Patients resident.	Tuberculosis.											
		Incidence. Fresh Cases (all forms).		Deaths.						All forms.			
				Phthisis.			Other forms.						
		No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.	No.	Ratio per 1,000 resident.		
1924*	104,137	1,221	11.7	941	9.0	223	2.1	1,164	11.2				
1925*	106,403	1,257	11.8	773	7.3	145	1.4	918	8.6				
1926*	109,113	1,062	9.7	715	6.6	160	1.5	875	8.0				
1927	111,363	1,018	9.1	653	5.9	86	0.8	739	6.6				
1928	113,987	907	8.0	617	5.4	88	0.8	705	6.2				
1929	115,875	985	8.5	725	6.3	78	0.7	803	6.9				
1930	118,039	948	8.0	667	5.7	72	0.6	739	6.3				
1931	120,051	924	7.7	616	5.1	73	0.6	689	5.7				
1932	121,261	1,004	8.3	657	5.4	79	0.7	736	6.1				
1933	122,725	950	7.7	635	5.2	79	0.6	714	5.8				

\* Cases where Tuberculosis was returned as a *secondary* cause of death included in the deaths for these years.



that in a number of hospitals there is over a period of years a close numerical relationship between the new cases arising and the deaths from tuberculosis. Where tuberculosis is detected in the early stages recovery frequently occurs, so that the number of cases reported will be higher than the number of deaths resulting from this disease. Suitable accommodation for the treatment of tuberculosis is provided in a large number of mental hospitals; it may be that a high death rate relative to the cases arising will indicate a failure to detect the presence of tubercular infection at an early stage. Thoroughness in the regular physical examinations of patients may result in a reduction in the number of deaths from this cause even though there will be an apparent increase in the incidence of the various forms of the disease.

### *The Enteric Group.*

There were 200 cases (83 males, 117 females) of typhoid and paratyphoid fevers during the year. In addition, one male and ten female nurses were affected and one of the latter died.

During the last ten years—in a total of 1,351 patients affected—74·8 per cent. have been women, and the case mortality has been : for men, 32·1 per cent., for women, 23·6 per cent.

Year.	Enteric Fever.									
	Patients.						Staff.			
	Incidence.			Deaths.			Incidence.			Deaths.
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M. F.
1924...	23	101	124	5	22	27	2	12	14	— —
1925...	29	99	128	8	24	32	2	17	19	— 3
1926...	31	77	108	10	20	30	1	10	11	— 2
1927...	37	100	137	9	19	28	1	6	7	— 1
1928...	50	169	219	25	50	75	5	12	17	— 2
1929...	16	104	120	6	26	32	—	14	14	— 2
1930...	34	72	106	9	19	28	—	—	—	— —
1931...	21	89	110	6	14	20	—	—	—	— —
1932...	16	83	99	5	20	25	—	10	10	— 1
1933...	83	117	200	26	25	51	1	9	10	— 1

Cases were reported in 1933 from 33 hospitals, in 19 of which they were confined to the female and in 4 to the male side of the hospital. In two of the London County Council hospitals (Claybury and Banstead) there were a number of cases. At Claybury 20 were notified, 18 on the female side of the hospital. Here improved bacteriological methods in the isolation of the bacilli and the consequent detection of carriers has had excellent results. At Banstead there have been 13 cases, all females, irregularly distributed through a group of wards.

The increase, during this year, in the number of patients suffering from enteric group disease has been almost entirely

due to an epidemic which occurred at the Northampton Mental Hospital. During the year there were 94 cases, 68 male and 26 female, of typhoid infection, resulting in the deaths of 22 men and 7 women. Sporadic cases of enteric with occasional small outbreaks had occurred amongst the patients for many years, but there had been no known cases on the male side for over three years. In the period immediately following the 1st September, 1933, there was a severe outbreak of typhoid fever affecting both sides of the hospital but predominantly the male patients. This may have been due to the fact that before the outbreak occurred, it had been decided to inoculate all the patients in the hospital. As two female patients had suffered from typhoid earlier in the year the inoculation was done first on the female side and by August 25th, 230 of the 450 women had already been inoculated. The outbreak was confined entirely to patients; no member of the staff or of those resident on the estate was affected.

The sudden wide spread of the disease in many different wards on both sides of the hospital within a few days suggested some general source of infection conveyed in articles of food supplied only to patients. Visits for investigation were paid to the hospital by one of our Commissioners and by a medical officer of the Ministry of Health. After careful inquiry they thought that the probable cause of outbreak was to be found in infection conveyed by foods which are handled after cooking in the kitchen, such as meat paste, fish paste and brawn. While it was impossible to trace the exact origin of the food infection it was thought to lie in the unsatisfactory arrangement of the water and sanitary services of the hospital.

The Committee of the hospital have in contemplation a new arrangement by which the sewage, instead of being dealt with by broad irrigation, will be discharged into the Borough mains.

#### *Dysentery.*

The table below shows the comparison of the figures since 1923.

Year.	Dysentery.			Severe Diarrhoea.
	Fresh cases.	Incidence rate per 1,000.	Death rate per 1,000.	Fresh cases.
1923 ... ..	458	4·5	0·9	248
1924 ... ..	362	3·5	0·9	223
1925 ... ..	253	2·4	0·6	277
1926 ... ..	515	4·7	0·9	276
1927 ... ..	307	2·8	0·4	184
1928 ... ..	403	3·5	0·6	201
1929 ... ..	372	3·2	0·3	193
1930 ... ..	254	2·2	0·2	189
1931 ... ..	423	3·5	0·4	269
1932 ... ..	563	4·6	0·4	220
1933 ... ..	457	3·7	0·4	223



The number of cases of dysentery reported was 457, a reduction of 106 from the figure for the previous year.

The death rate remains unchanged.

It is encouraging to note that of the 99 public mental hospitals, 61 have had no cases of dysentery during the year under review. The highest incidence occurred at Cheddleton in a series of cases concentrated mainly in the first and third quarters of the year.

The difficulty of dealing with the conditions is illustrated by the following case. A nurse had had an attack of dysentery while nursing in the dysentery ward 13 months previously, but thereafter a weekly culture was done eight times in succession, and always with a negative result. She was completing her third year of training in the infirmary and served food to all the others. Her only illness since dysentery last year was a sick headache with vomiting, but no diarrhoea, after over indulgence in the Christmas dinner; she was not off duty then and was not bacteriologically examined. Immediately on the outbreak of this epidemic her fæces were cultured with a positive result. As a preventive measure sensitized vaccine is being given to patients in this hospital, but it is too early to say what is the effect of this on the incidence of the disease.

While we are convinced that the solution of the problem of dysentery must depend upon the efficacy of the general measures taken to prevent spread in the wards, the extent to which the so-called "carrier" is responsible for particular outbreaks will be determined by the progress in our bacteriological technique and by the possibility of determining the continued infectivity of particular patients. It has recently been impressed upon us that delay in making cultures from specimens has in a number of instances resulted in failure to isolate the pathogenic organism. Cultures made at the bedside from specimens obtained by rectal swabs are stated to give better results.

### *Erysipelas.*

There have been in all 221 (84 male and 137 female) cases of erysipelas reported from 63 hospitals. There were 21 deaths.

The highest incidences were at Banstead 10, Storthes Hall 9 and 8 each at West Park and Northampton mental hospitals.

### *Influenza.*

The notifications of this infection were extremely high, 8,645, including 92 cases of influenzal pneumonia.

There were 285 deaths, a case percentage of 3.3.

### *Pneumonia, &c.*

Non-tuberculous inflammatory diseases of the lungs and bronchi resulted in the deaths of 599 males and 819 females, a total of 1,418, of whom 774 were over the age of 55.

This group constitutes 16.0 per cent. of the deaths from all causes.

9. *Murder of a Male Nurse by a Patient.*

We regret to have to report the murder of a male nurse, John Edward Knott, by a patient (P.J.T.) at the Cheshire County Mental Hospital, Parkside, Macclesfield.

On August 16th, 1933, at about 9 p.m., Nurse Knott, whilst attending to P.J.T., a violent and dangerous patient who slept in a single room in the refractory ward, was struck on the head by the patient with an earthenware chamber utensil. Nurse Knott, who was 58 years of age, died a few hours later from cerebral hæmorrhage following fractures of the skull.

A verdict of murder was returned by the coroner's jury, but before the case came on for trial the patient was removed to the Broadmoor Criminal Asylum.

In a rider the jury recommended that in future all rubber utensils be used in all refractory wards of the institution.

It was stated at the inquest that rubber utensils were distributable at the nurse's discretion, and it seems to have been an error of judgment to trust this patient with an earthenware one.

## REGISTERED HOSPITALS.

(*Thirteen in number.*)

A list of these hospitals will be found in Appendix A in Part II.

*Patients resident on 1st January, 1934.*

Status.					Males.	Females.	Total.
Voluntary	...	...	...	...	196	282	478
Temporary	...	...	...	...	6	26	32
Certified	...	...	...	...	745	1,167	1,912
Total	...	...	...	...	947	1,475	2,422

A year previously the patients in these hospitals numbered 2,446 (males 970, females 1,476), so that during the year they decreased by 24 (males 23, females 1).

*Direct admissions* numbered 882 (males 361, females 521). Of the total number 62·1 per cent. were voluntary patients, 6·1 per cent. were temporary and 31·8 per cent. were certified.

*Departures and Discharges.*—The percentage of total departures and discharges (recovered, relieved and not improved) to the admissions during 1933 was 76·2 and of recoveries alone 37·6 (males 36·8, females 38·2). The percentage distribution of the discharges and departures was—certified, 23·5; temporary, 4·3; voluntary, 72·2.

*Deaths* in these hospitals numbered 200 and the death rate per cent. of the daily average number of all patients resident was 8·3 (males 9·8, females 7·3).



*Use of Voluntary and Temporary Treatment.*—Of 882 patients admitted to these hospitals, 62·1 per cent. were received as voluntary patients—the average for the quinquennium (1929–33) being 61·6 per cent. At only two of them was the proportion of voluntary admissions below 50 per cent. The percentages ranged from 19 to between 60 and 69 at Bootham, The Lawn, Bethel, The Retreat, and Cheadle, up to 75 at Bethlem.

With respect to temporary treatment, 6·1 per cent. of the admissions were received as temporary patients; there were two hospitals whose total admissions were respectively 33 and 36, where no temporary patient was received; the hospitals with the highest percentage of temporary admissions were Wonford House where 29 per cent. of 21 admissions were received on that footing, Coton Hill with 13 per cent. of 23 and The Warneford with 12 per cent. of 41.

The value of voluntary and temporary treatment in reducing resort to certification is strikingly illustrated by the fact that of the total admissions to these hospitals not quite 32 per cent. were received upon Order and Certificates. The hospitals with the lowest percentages were Bethlem 19, The Retreat 24, Cheadle 26, Coton Hill 30; at four others they were under 40, at three others they were under 45, and only two were above 50 per cent. This is an excellent record and reflects a service that cannot fail to be much appreciated by the public.

*The Lawn (Lincoln).*—Dr. Mary R. Barkas, who had held the position of Superintendent here since April, 1928, while absent on leave in New Zealand, resigned her appointment in March, 1933, for personal reasons. Her high professional attainments combined with her capacity for practical administration were of great value to the Hospital. She was particularly interested in effecting improvements in arrangements for recent and convalescing patients. To fill the vacancy caused by her resignation, the Governors promoted Dr. Myra Mackenzie (M.B.Aberd.), who for eight years had been Assistant Medical Officer here.

#### NAVAL AND MILITARY HOSPITALS.

*Royal Naval Hospital, Great Yarmouth.*—The Commissioners who visited this hospital on 18th May, 1933, found upon the books the names of 226 patients, including one patient upon a voluntary footing. With the exception of two patients, absent on trial, all were in residence.

An epidemic of influenza occurred during the winter but with this exception the general health of the patients had been excellent, and the mortality rate for the year 1932 was the remarkably low one of 1·8 per cent.

The diet scale continues to be a generous one and in this

connexion the Commissioners drew attention to the low incidence of tuberculosis at the hospital and to the fact that at the date of their visit there was no patient known to be suffering from that disease. Considerable attention is given to the occupation of the patients, 64 patients have parole beyond the grounds and all the wards with one exception are administered on the open door principle.

The hospital was in all respects well ordered ; a new and well fitted dental room has been brought into use where a dental surgeon attends weekly, and the Commissioners were impressed with the atmosphere of contentment which prevailed throughout the hospital and with the high standard of nursing which had been attained.

*Royal Military Hospital, Netley.*—The Commissioner who visited “D” Block of the Royal Victoria Hospital, Netley, on 24th October, 1933, reported that the day rooms, wards and single rooms were in excellent order and that the patients were evidently in receipt of careful medical attention and efficient nursing.

Although a considerable number of military and air force patients suffering from mental illness had been admitted during the period under review there were but 16 in residence at the date of the visit, the remainder, if invalided, having been sent to their homes or to institutions in accordance with their disabilities.

#### STATE CRIMINAL ASYLUM, BROADMOOR.

This institution was visited by Commissioners on 10th April, 1933. They were satisfied with the general conditions and surroundings of the patients. Whilst recognizing that many patients were employed, they thought that in view of the recognized good effect which occupation and recreation have in keeping the mind alert and in influencing behaviour, some more active measures might be taken in connexion with occupation therapy both on the male and female sides of the institution.

The number of patients resident was 841—males 630, females 211.

#### LICENSED HOUSES.

*(Fifty-three in number.)*

On the 1st January, 1934, there were 19 Metropolitan Houses licensed by us and 34 Provincial Houses licensed by Justices for the reception of patients under the Lunacy and Mental Treatment Acts. The latter number one less than a year ago, the licence of one of them having lapsed.



*Patients resident on 1st January, 1934.*

—				Males.	Females.	Total.
Metropolitan Houses :						
Voluntary	...	...	...	67	112	179
Temporary	...	...	...	3	7	10
Certified	...	...	...	326	624	950
Provincial Houses :						
Voluntary	...	...	...	93	152	245
Temporary	...	...	...	1	17	18
Certified	...	...	...	596	864	1,460
Total	...	...	...	1,086	1,776	2,862

The total number of patients resident in these houses showed a decrease of 86 (48 males and 38 females) during the year.

*Direct admissions* numbered 1,118 (males 424, females 694).

Of the total number, 54·5 per cent. were voluntary patients, 6·8 per cent. were temporary and 38·7 per cent. were certified.

The percentage of total *departures and discharges* (recovered, relieved and not improved) to the admissions was 73·7, and of recoveries alone 29·9 (males 30·4, females 29·5). The percentage distribution of the discharges and departures was—certified, 34·5; temporary, 5·2; voluntary, 60·3.

The *deaths* numbered 298, and the death rate per cent. of the daily average of all patients resident was 10·3 (males 10·3, females 10·3).

*Use of Voluntary and Temporary Treatment.*—During 1932, 54·5 per cent. of the 1,118 patients admitted to these institutions were voluntary. As has been noted in previous years, the procedure appears to be practised rather more extensively in the provincial than in the metropolitan houses, the respective percentages of these two groups being 60·1 and 49·5.

For temporary treatment the Board's approval of the house is required; and, subject in some cases to certain limitations, 17 metropolitan and 27 provincial houses are approved for this purpose. Of the direct admissions to these 44 institutions, 6·5 per cent. were temporary patients in the metropolitan and 7·4 per cent. in the provincial houses.

The numbers relating to particular establishments in these two groups are mostly quite small; for instance, in 24 cases the admissions during the year did not reach 10. We hope to see more extended employment of temporary treatment at these establishments; but it is gratifying to record in the meantime that the use which they have already made of the Mental Treatment Act has reduced resort to certification to less than 40 per cent. of their admissions. As we said with regard to Registered Hospitals, this salutary effect of the use of the Act cannot fail to be much appreciated by the public.

*Variations in Licences.*—The changes that have taken place in the licences are included in the revised list of these houses which, with their present licensees, may be found in Appendix A. in Part II. Among them may be mentioned :—

*Hendon Grove.*—This licence was transferred in December last to Dr. Francis Benjamin Sutherland and Mrs. Bessie Stewart Sutherland. The licence was subsequently transferred from Hendon Grove to other premises known as The Elms, Hatton, near Feltham, Middlesex. Hendon Grove has been used for the care and treatment of persons suffering from mental disorder for over fifty years, the first Licence in respect of this house having been granted in June, 1879.

*The Silver Birches.*—The licence of this house at Epsom lapsed on the 2nd November last. With the closing of this house a long connexion with the care of the mentally disordered was terminated, the premises having been employed for this purpose by Dr. Daniel’s family for over a hundred years.

SINGLE-CARE.

The following table shows the number of patients who were resident in private single-care under the provisions of the Lunacy and Mental Treatment Acts, but exclusive of cases found of unsound mind by inquisition.

*Patients resident on 1st January, 1934.*

Status.					Males.	Females.	Total.
Voluntary	...	...	...	...	1	7	8
Temporary	...	...	...	...	—	—	—
Certified	...	...	...	...	81	250	331
Total	...	...	...	...	82	257	339

The above figures are very similar to those of a year ago, and we are able to report, as a result of our visits to these patients—to some of whom a second visit has been paid—that the arrangements for their care and treatment was generally satisfactory.

CERTIFIED PATIENTS IN PUBLIC ASSISTANCE INSTITUTIONS AND MUNICIPAL GENERAL HOSPITALS.\*

The number of patients certified under the Lunacy Acts and detained in Public Assistance Institutions and Municipal General Hospitals on 1st January, 1934, was 15,166 (males 6,507, females 8,659). It should be noted that these figures relate only to persons certified under the Lunacy Acts, and that they by no means represent the total number of mental cases in these institutions.

\* The number of mental defectives in these institutions will be found on p. 53.



Notwithstanding the need for further accommodation in County and Borough Mental Hospitals, no additional Visiting Committee has availed itself of the facilities afforded by Section 26 of the Lunacy Act, 1890, for providing accommodation in Public Assistance Institutions for selected patients.

#### OCCUPATION THERAPY.

During the year the Board issued a memorandum\* on occupation therapy for mental patients. Special reference was made to two aspects of treatment, one aim being to cure the disorder, and the other to prevent the development of unpleasant habits hitherto associated with many forms of chronic mental disorder, and to re-educate the deteriorated patient to a new standard of community life. We have already seen enough of the results of occupation therapy to feel sure that it leads to the amelioration of conditions which hitherto have not been successfully dealt with in any other way. There is general agreement that occupational training is a valuable means of developing the mind, and, where the mind has already developed, of maintaining interest in life and happiness ; but the extent to which it is wise or proper to apply it in mental disorder has not yet been fully worked out. Further investigation of this problem is urgently needed and we would draw the attention of the medical staffs of mental hospitals to the field for research which is here presented.

Many workers who have applied occupational treatment in cases of the milder forms of mental disorder find that the patients are happier and more ready to accept the need for hospital treatment. Few of these cases can be treated effectively, if indeed at all, in their own homes, and any measure must be beneficial which helps them to bear more easily the separation from their families whilst receiving other forms of treatment only to be obtained in a well equipped hospital.

In regard to the more acute mental disorders there is considerable difference of opinion as to the stage at which it is proper to apply active mental or physical remedial measures ; indeed some hold that it is improper to apply these at any stage of the acute disorder. Clearly there must be cases where, either for physical or mental reasons, rest and more purely medical measures are so urgent as to preclude the possibility of immediate occupational treatment. But it is equally important to recognize the stage at which idleness, mental and physical, may lead to commencing deterioration of outlook and habit. It is, in our view, of primary importance to recognize the time when the patient should commence occupational treatment, because delay may adversely affect the prospects of the patient's recovery.

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\* Memorandum on Occupation Therapy for Mental Patients. H.M. Stationery Office. 6d. net.



In chronic or continuing cases we are on much firmer ground. With these, treatment should never be stopped as the effect is progressive and therefore demands close continuity. It is always necessary to understand the emotional life of the patient and in each particular case to study the extent to which training may serve to maintain contact with reality in the ordinary affairs of life. It is too often assumed that the patient who at one stage is entirely absorbed in his world of hallucination is incapable of enjoying mental and physical activities which entail co-operation with the others of his own group. Co-operation has advantages far beyond the actual work which may result from it. The mind must either find activity in the ordinary things of life or it must pass into a condition of lethargy and social uselessness. The extent to which this may occur is evident in some of the difficulties of nursing troublesome patients who have to live for long periods in Mental Hospitals. The veneer of unpleasant habits is more often the product not of the mental illness itself but of factors we now know we can control by a properly applied system of occupation therapy. Dr. Grills, of the Mental Hospital at Upton, Chester, in a pamphlet addressed to his nursing staff says : " Take ward 2 as an example of useful outdoor team work when applied to a whole ward. This was a noisy, dirty and destructive ward before active treatment ; since its application every patient on an average has put on  $3\frac{1}{2}$  lbs. in weight ; they sleep better. There is no noise night or day and no draughts are now required. There is no breaking of glass except on one occasion when a patient was kept in for medical examination. The work done by those patients was done by the whole ward in teams and out of doors and conveyed the idea of usefulness. In its beginnings it looked so grotesque that a patient in another ward said he had never seen anything so funny . . . . However, this apparently ridiculous effect has resulted in such joy . . . tearing off buttons is now no longer an occupation . . . . Some time ago I found it necessary to have cement paths for the airing court of this ward because a daily occupation was the picking of holes in the paths and the throwing of stones and rubbish together with hats, shoes, etc. on the flat roof of the corridors. The cement paths are now a luxury and not a necessity."

The value of occupation therapy will vary very greatly according to the mode of application. In our view it is important that treatment should be skilfully and methodically applied and should follow the course indicated by the medical officer who is watching and treating the case. We do not advocate any form of treatment which is not applied or varied according to the doctor's prescription and for this reason doctors who work in this branch of medicine should make every effort to equip themselves with the knowledge and experience necessary to any measure of success in treatment. Such progress has been made in this country that it is hardly necessary to go abroad



to see the work. We suggest that Visiting Committees should encourage their medical staffs to pay visits to other mental hospitals and to undertake such investigation as may be necessary to equip them for the task of applying active treatment to the majority of the patients living under their care.

The training of all the nurses is vital to the success of these measures. Before the medical superintendent undertakes this, he should recognize quite clearly that it involves in them a complete change of outlook towards the nursing of the mentally disordered. It follows, therefore, that training must be thorough and prolonged, and must entail a very great deal of hard work for those who carry it out. The benefits to the patients are so great that it is worth while facing the difficulties of a transitional period to achieve the results which experience has shown to be possible. It is also essential that every member of the nursing staff should be trained and that during the transition period the medical superintendent should give his full support to his medical officers, occupation therapists and the other members of the staff who are working to create a new environment in which so many patients will find usefulness, contentment and happiness.

#### SOCIAL WORK AND AFTER-CARE.

Last year we mentioned the important step taken to raise the standard of mental health workers by the organization of a one year post graduate course at the London School of Economics. Only students who already hold a social science certificate and who have had experience in general social work are accepted; the aim of the course is to give them some insight into three branches of mental health work, viz., child guidance, work for adult patients and work with mental defectives. Personality and character count for much in this work but there is also need for first hand knowledge of social conditions and resources. The social worker is largely concerned with the relatives of patients and the conditions in which they live and she is constantly faced with problems which demand practical experience of such subjects as education, insurance, legislative measures and social agencies of all sorts. It is because we believe that a trained worker with experience of social conditions and of mental health can help the psychiatrist to an extent that widens for him the possibilities of treatment, that we welcome this step to create a standard of training for social workers in out-patient departments and mental hospitals.

Through the generosity of the Commonwealth fund the Child Guidance Council is this year again able to lend a limited number of trained social workers to hospitals and clinics and to pay two-thirds of their salaries for a period of one year. It is much to be hoped that Mental Hospital Committees and Medical Superintendents will take advantage of this exceptional opportunity of establishing a social service in their hospitals.



A trained social worker is now employed for the loan period at Springfield Mental Hospital, Middlesex ; at Cefn Coed Mental Hospital, Swansea, and at Hill End Mental Hospital, Hertfordshire. The London County Council has this year taken over from the Child Guidance Council after the loan period the services of two trained workers who divide their time between four Hospitals, Banstead, West Park, Ewell and Horton. Trained workers are also employed by the London County Council in two of their Observation Wards under the Public Health Department and in three Out-patient Departments in municipal hospitals.

A part time social service is carried on in some mental hospitals through nurses or through the agency of the local Voluntary Association for Mental Welfare.

As illustrating the directions in which the services of a social worker may be of value, the work at Banstead Mental Hospital is of special interest. With a view to helping the medical staff to an understanding of the factors associated with the breakdown of certain patients, the social worker made personal inquiries into family histories in 166 cases. Secondly, contact established between the social worker and the families of patients and the resultant knowledge of the home conditions has been of great value in preparing the way for the discharge of recoverable cases. Thirdly, in the case of patients whose illness is of longer duration and who are suitable to be boarded out, the social worker has prepared the way either by arranging with the relatives or with foster parents ; and has thereafter visited the patient and reported on his progress.

The Mental After Care Association continues to do much useful work and the small Homes it has established in various parts of the country are of great value for convalescent patients.

#### BOARDING OUT IN EAST SUFFOLK.

An experiment is being tried in Suffolk in boarding out patients from the Mental Hospital. The Central Association for Mental Welfare offered to pay the salary for a year of an officer to undertake this work in an area where there was overcrowding in the Mental Hospital. With the active co-operation of the Medical Superintendent and Visiting Committee of St. St. Audrey's Hospital and of the Suffolk Mental Welfare Association, East Suffolk was selected as a suitable area for starting the work. An assistant was appointed to work under the Secretary of the Suffolk Mental Welfare Association, and in July, 1933, the first patients were sent out on trial under Section 55 of the Lunacy Act.

By the end of the first six months about 25 patients had been placed out, 10 from St. Audrey's Hospital and 15 from the Kedington Public Assistance Institution. The sum paid to the guardian varies from 14/- to 17/- weekly in addition to an



allowance for clothing. All the patients placed out at present are elderly women some of whom have been in the Mental Hospital for over 20 years. Some are active and able to help in the house, whilst others are too infirm or confused for useful work, but with hardly any exceptions they have rejoiced in a return to home life.

The experiment is still in its early stages and may be capable of further development, specially in the type of patient it is found possible to board out. During these first months it has at least been proved that for a relatively small payment it is possible to find sympathetic and capable women to undertake the care of mental patients. Their motive appears to be partly a financial one combined with a real interest in the work and the desire, felt by so many women, to have someone to look after. There are at present in Suffolk more guardians available than there are suitable patients to place out. It has also been shown beyond doubt that even patients who are thoroughly institutionalized do appreciate and respond to normal surroundings and home life. Guardians prefer to have more than one patient, and as long as this does not segregate the patients into a separate group and prevent them from living as members of the family, it may be desirable from the point of view of companionship.

#### CENTRES FOR OUT-PATIENT TREATMENT.

From time to time in our Annual Reports we have traced the development of the provision of out-patient treatment for nervous and mental disorders. We appreciate the valuable work done at the mental hospitals themselves and at such centres as, for example, dispensaries or in municipal offices. But in the present Report we wish to refer again to the growth of those Centres (so-called Clinics) for the treatment of mental illness which form a section of the out-patient department of a general hospital, and at which at least a share of this treatment is directed by members of a mental hospital's medical staff. In our Eighteenth Report,\* we indicated that, excluding the London area, during the five years 1925–30, the twelve voluntary general hospitals thus linked to mental hospitals had grown to 25; and that 35 more such arrangements were made during the course of the first year's operation of the Mental Treatment Act. Thus there were, at the close of 1931, 61 general hospitals linked up for the purposes of out-patient treatment of mental illness with 49 mental hospitals—the difference between these two numbers being due to the fact that, in the cases of eleven of the latter, each had two or more general hospitals linked up with it.

During the years 1932 and 1933, at 30 more general hospitals arrangements were made for the out-patient treatment of mental

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\*See page 49 of the 18th Annual Report (1931) of the Board of Control.



illness to be carried out in conjunction with the medical staff of a neighbouring mental hospital. Allowing for some half-dozen cases in which the arrangements had lapsed, there were, at the close of 1933, 85 general hospitals in association with 67 mental hospitals exclusive of those for the County of London. In nine instances, the mental hospital was associated with two general ones, in six instances with three, and in one case with as many as four; and there were seven of the general hospitals whose out-patient departments were associated with two mental hospitals.

Evidently another substantial step forward has been taken; and we believe that we have reached a stage at which adequate facilities for the out-patient treatment of nervous and mental disorders should properly be regarded as an essential and normal part of an area's mental health service. The absence of such arrangements involves a hardship to persons suffering from these disorders, especially in their incipient and early stages; and a real handicap to the members of the mental hospital's medical staff, whose outlook and work must be liable to suffer by being cut off from a share in the out-patient treatment of these illnesses in their inchoate forms. Equally is this a handicap to the medical staff of the general hospital itself.

It is therefore with some disappointment that we find that there still are sixteen County and seven County Borough Mental Hospitals which have no joint arrangement between the mental hospital and general hospitals within the area. However, in two of these twenty-three mental hospitals negotiations for the provision of the facilities in question are pending; in another, the matter is under consideration; in two others attempt is made to carry out the work in public offices; at three\*, out-patients are seen at the mental hospital itself regularly once a week (in one instance twice a week) and, at two others, patients can be seen by appointment at the mental hospital. While this indicates that some effort is being made, it is disquieting to observe that such large areas as Cumberland and Westmorland, Durham, much of Northumberland, the East and North Ridings, Shropshire, Leicester C. and C.B., a good deal of Lincolnshire and almost the whole (eleven counties) of Wales—representing between them a population of five-and-a-half millions—are without the arrangements and facilities which we have in mind. The cost of their provision is slight. It is our hope that the good will which we feel sure exists both at the general and the mental hospitals concerned will prevail, and that an efficient Centre will be developed in connexion with each of these twenty-three hospitals.

Turning to the arrangements between these 67 mental and 85 general hospitals, a scrutiny of the returns makes it clear that, with respect to the nature and extent of their activities, there are

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\*Including these three, there are 15 mental hospitals at which a weekly session for out-patients is held.



wide differences between them, and, in some cases, it is doubtful whether the important position they should hold in properly organized arrangements for the prevention and treatment of mental disorders has yet been attained. Indeed, as Centres for actual treatment, a few of them appear to be rather nominal than real : where, for instance, each attendance of the mental hospital physician is only upon a request from the general hospital, and where the total number of cases seen during the year appears to be almost negligible. At others the number of attendances in the year either only equals the number of persons presenting themselves as out-patients or so slightly exceeds it as to allow less than two attendances for each patient ; this suggests that the aim of the Centre is only to a slight extent treatment, and that it is rather to comply with requests for advice as to diagnosis and disposal. For example, at twelve Centres, serving areas whose joint general population is approximately 5,790,000, the total number of out-patients attending during the year was only 508 and their attendances numbered only 861 (less, that is, than an average of two each) ; and at five of these twelve places the session was held only twice monthly, and at one only upon request. This criticism does not imply that good work is not being done : assistance in diagnosis and other advice are very valuable ; but they fall very far short of the services which we are convinced—and which experience, indeed, has shown—such out-patient Centres can render.

*Frequency with which Sessions are held.*—In 55 out of the 85 Centres, a weekly session is said to be held. Of the remaining 30, in 16 the session is said to be held either fortnightly or twice a month, in 7 instances monthly, and at 3 places only as required or upon call. On the other hand, there are 4 (Radcliffe Infirmary, Cardiff Royal Infirmary, Northampton General Hospital, and the Children's Hospital at Plaistow) at which a session is held by the same physician twice a week. This question of frequency of session is of importance because we are advised that, if actual treatment of mental cases as out-patients is going to be undertaken, the physician must be prepared, especially during the early period of treatment, to see the patient at least weekly. It is, therefore, obvious that Centres at which sessions are held not more frequently than every two or three weeks, or even monthly, either are not undertaking treatment in the sense we have in view, or are restricting the type of case that may attend there. It goes without saying that, while the help of as many as possible of doctors capable of carrying out this work is of great advantage, the arrangements should be such that the patient sees the same doctor at each attendance. It is usually necessary for the physician to set aside an hour for the first interview with each new case and half-an-hour for subsequent interviews ; while fatigue, especially mental, sets a limit to the number of consecutive patients which a doctor can see. All these points are,



of course, of importance in assessing the capacity and possible effectiveness of these Centres.

By way of contrast, some account may be given of the Centres of out-patient treatment established in twelve other areas, several of which have been at work for ten years and upwards :—

*Cardiff*.—The Clinic, opened in 1920, is held at the Cardiff Royal Infirmary. It is staffed by five physicians, of whom the senior is both Superintendent of the City's mental hospital and a member of the honorary staff of the Royal Infirmary, in a ward of which beds for mental cases, though not specifically allocated, are available.

The number of patients treated during 1933 in this section of the hospital's out-patient department was 302, including 81 who came only for diagnostic purposes. Six were admitted to the general and 58 to the mental hospital. Deducting these, the number of attendances was 835. A social worker, employed on the staff of the mental hospital, is available.

*Dorset*.—Two Centres have been provided : one, in 1922, in the out-patient department of the Dorset County Hospital ; the other, in 1931, in the Cornelia Hospital at Poole. A weekly session is held at both these general hospitals, the work being conducted by the Deputy Superintendent and another member of the medical staff of the mental hospital. The number of patients who, during 1933, attended these two out-patient Centres was 113, of whom 39 came only for diagnosis or advice. The number of attendances was 776. Of those attending, 31 were admitted to the mental hospital. The services of a social worker are not available at Dorchester, except for cases of mental deficiency.

*Isle of Wight*.—Since the middle of 1932, a weekly session for the treatment of mental cases has been held in the out-patient department of the Royal Isle of Wight County Hospital at Ryde, also at the County Hall in Newport, and as required at the Mental Hospital. The Superintendent of the last named institution and his Deputy conduct the work, and voluntary help is available for social work. The number of patients treated during 1933 was 118, whose total attendances numbered 611. Of those seen as out-patients, 17 were admitted to the mental hospital—13 as voluntary patients.

*Kingston-upon-Hull*.—Since the middle of 1931, a clinic has been held in the out-patient department of the Hull Royal Infirmary. Its work is carried out by the Superintendent of the City's mental hospital. The number of patients who presented themselves in 1933 was 52, of which 10 came only for diagnosis ; their total attendances were 180. Of the 52, 10 were admitted to the mental hospital. Beds for mental cases, when required, are available at the Royal Infirmary which is a general hospital approved under the Mental Treatment Act for the reception of



voluntary and temporary patients. No arrangements have yet been made for social work.

*Northamptonshire.*—Early in 1931 a Centre was established at the Northampton General Hospital. A session is held twice weekly by one of the Honorary Assistant Physicians of the hospital who is also Deputy Superintendent of the mental hospital at Berrywood. Approximately 140 new patients presented themselves for treatment as out-patients during 1933, the total number of attendances being 1,500. The services of the Almoner's staff of the general hospital are available.

*County and City of Oxford.*—This clinic, opened in 1917, forms part of the out-patient department of the Radcliffe Infirmary. In the conduct of the work four physicians are engaged; the Superintendent of the mental hospital, who is Director of the Clinic, and one of the other three are members of the honorary staff of the Radcliffe, and one of the other two is also a member of the mental hospital staff. A four-hours session is held on two afternoons each week which, between the four doctors concerned, results in at least six sessions being held; these, however, scarcely suffice to overtake the work and there is sometimes a waiting list of a score of cases. During 1933, the number of cases seen was 223, of whom new cases numbered 123 (62 from the City and 61 from the County), and the total number of attendances was 1,647. For the past four years, a Child Guidance Clinic, staffed by the same personnel, is held at Bury Knowle in connection with the Children's Clinic at the Radcliffe: through it cases of mental deficiency are also passed, for whose examination at the Education Offices a morning is given each week. During 1933, 79 new and 34 old cases were seen; a total of 113. Of these, 9 were certified as mentally deficient, in 11 no action was necessary and 59 attended for treatment; the total number of attendances during the year being 332. The same social workers are available both for these clinics and for the work of the mental hospital. It is a fact that the customary growth of the number of patients in the mental hospital has fallen definitely short of the increase in the area's general population: it also has been commented upon that the number of patients in the third and fourth decades of life is disproportionately small. In the absence of other explanation, it is not unreasonable to ascribe this as due to the activity of this clinic.

*Portsmouth.*—Since November, 1926, weekly sessions for the treatment of mental illness have been held in the Out-patient department of The Royal Hospital by the Superintendent of the City Mental Hospital, one of his colleagues, and occasional clinical assistants. Help is available from an organized social service department. During 1933, the number of patients thus attending was 351: allowing for 143 who were sent for diagnostic



purposes, the number of attendances of the others was 1,022. Of those who presented themselves, 65 were admitted to the mental hospital.

*Sunderland.*—Since September, 1926, an active clinic for the out-patient treatment of nervous and mental illness has been in operation at The Royal Infirmary. It is conducted by a physician and assistant physician both of whom are on the honorary staff of the Infirmary and are respectively the Superintendent and Deputy Superintendent of the Borough Mental Hospital. Each of these officers conducts at least one session weekly. They also attend some out-patients at the rooms of the Mental Welfare Association. The number of persons who attended in 1933 was 190 ; their total attendances numbered 1,008, the weekly average for males being 10 and for women 9·4. Of the 190, those who attended the clinic for the first time numbered 132, of whom 34 had been at some time or other patients in the mental hospital ; there were 58 who had attended the clinic during one or more of the previous years ; and 98, so far as could be ascertained, were entirely new cases of nervous or mental disorder. Of these 98 cases, 18 were judged to be mental defectives ; 12 were organic cases of nervous disorder, 25 were examples of one or other of the psychoses, and 43 of the psychoneuroses. A member of the staff of the Welfare Association acts as social worker. Although no beds are specifically allotted to mental cases, the resources of the Infirmary are freely available for them as well as for terminal treatments of patients on leaving the mental hospital.

*Sussex (including Brighton).*—For the past ten years a section for the treatment of nervous and mental cases has existed in the out-patient department of the Princess Alice Hospital at Eastbourne, in which two beds are allotted to this clinic. With weekly sessions, its activity has been continuous, the physician who performs the work being a member of the hospital's honorary staff and also Superintendent of the East Sussex Mental Hospital at Hellingly. The latter's staff are also associated with the out-patient treatment for mental patients established in 1931 at the Royal East Sussex Hospital at Hastings, the Victoria Hospital at Lewes, and at the Hove Hospital. In connection with the work of the three last named, a social worker is available. In the last two, sessions are only held fortnightly. In 1926, out-patient treatment for mental patients was commenced in Brighton, first at the Offices of the Guardianship Society where it still is continued weekly and during the past four years at the Royal Sussex County Hospital. The two physicians who conduct this work are both members of the latter's honorary staff, one of them also being the Superintendent of the Borough Mental Hospital. In connection with this clinic, six beds for each sex are available at The Lady Chichester Hospital. Since 1931, Centres with weekly sessions for similar work have been maintained at the



Royal West Sussex Hospital at Chichester and at the Worthing Hospital, the work being carried out by the Superintendent and his Deputy of the mental hospital at Graylingwell. The number of patients who presented themselves at these eight Centres during 1933, in addition to 147 who were sent for diagnostic purposes, was 301 whose attendances were 1,910.

*Swansea.*—In January, 1933, a section for nervous and mental cases was arranged in the out-patient department of the Swansea General and Eye Hospital. The work, under the direction of a member of the honorary staff of the hospital who is also Superintendent of Cefn Coed Hospital (the new mental hospital for Swansea), is conducted in weekly sessions by him and, according to its varying demands, by one or more of his four colleagues. The services of the latter Hospital's trained mental health worker are also available at each session for social work. Apart from 28 patients who were either "on trial" from the mental hospital or voluntary patients who had left it with a view to continuing treatment at this clinic, 85 new cases presented themselves in the eleven months during which it was open, the total number of attendances being 167. Owing to pressure of time and present space, the out-patient department in the Swansea General Hospital is largely consultative. Hence it is that of the 85 new cases, 56 came under this head, 21 being admitted to Cefn Coed and 6 to the General or other hospital, and 29 being treated by physical, social or medicinal means through their own doctor upon lines advised after consultation at the clinic. However, some 20 were able to continue treatment, mainly psychotherapeutic, all of whom recovered or were considerably improved.

*Wiltshire.*—Since early in 1927 clinics, each with a weekly session and with the services of a social worker, have been held in the out-patient department of the Victoria Hospital at Swindon, at which two beds are allotted for mental cases, and at the Trowbridge Cottage Hospital. This work is carried out by the Superintendent of the County Mental Hospital who is a member of the honorary staff of the Victoria Hospital and by his Deputy. The number of cases thus treated during 1933 was 119, their total attendances being 359. Of these patients, 26 were admitted to the mental hospital. At the largest of the general hospitals in the County there is also, it is understood, a Centre for the out-patient treatment of mental illness, but with this work the medical staff of the mental hospital are not associated.

*The West Riding (Yorks).*—The out-patient treatment of mental disorders began here as far back as 45 years ago. That, however, was at the mental hospital itself—at Wakefield in 1889, at Menston in 1890 and at Storthes Hall at the opening of this hospital in 1904. Sessions were held twice a week or daily if necessary. Now, since 1928 there have been Centres in Sheffield



for this treatment in the out-patient departments of the Royal Hospital and the Royal Infirmary, the work of which is conducted by an honorary physician of each of these hospitals assisted by four members of the medical staff of the South Yorkshire Mental Hospital at Wadsley ; another member of the latter's staff assists the physician in charge of similar work at the Rotherham Municipal Hospital which was started in 1931. Since 1932, there has been a section for cases of nervous and mental disorders in the out-patient department of the Huddersfield Royal Infirmary conducted by a member of their honorary staff who is also Superintendent of Storthes Hall and by his Deputy ; and, since 1933, there have been corresponding Centres at the Clayton Hospital (Wakefield) and General Infirmary at Leeds, the work of which is conducted by two members of the mental hospital staff at Wakefield ; and at the Bradford Royal Infirmary, in association with the Superintendent of the mental hospital at Menston and one of his colleagues. The number of out-patients who, during 1933, came for treatment at these ten Centres was 825 and, deducting 50 whose visit was for diagnostic purposes, the number of their attendances was 6,060. In the case of three of these mental hospitals, 85 patients were admitted from these out-patient Centres. No arrangements have been made for social work.

*General.*—The complete returns furnished to the Board show that just under 10,000 cases were treated for nervous and mental conditions as out-patients during 1933, and that the total number of their attendances was 45,000 ; but, as we have indicated, probably more can be learnt from a summary of the figures relating to the twelve areas which have been set out in some detail. They show 2,768 patients treated during the year with 16,075 attendances which, allowing for those who presented themselves only once for diagnosis or advice, yields an average of seven attendances by each patient. Naturally, a question suggests itself as to how nearly maximum requirements in this direction have been met in areas with the most active Centres. While it is not yet possible, we feel, to give any reliable answer to such inquiry, the following figures have their interest. We omit the West Riding of Yorkshire from the calculation because of the immensity of its population (over three-and-a-quarter millions) and the fact that, in the face of certain difficulties, much yet remains to be done before this work can be regarded as properly organized. It appears that 1,422 patients came from a population of 3,057,144, that is, one in 2,150 ; the highest and lowest proportions which went to make up this average being respectively 1 in 710 (Portsmouth) and 1 in 2,548 (Wilts). As might have been anticipated, for the most part the highest are to be found in cities and towns where access to the out-patient centre usually presents the least difficulties. For example, in five County areas the proportions approximate closely, viz.,



Wilts (1 in 2,548), Sussex (1 in 2,212), Northants (1 in 2,178), Dorset (1 in 2,118), Oxfordshire (1 in 1,700); whereas three Boroughs gave the following proportions: Sunderland (1 in 978), Cardiff (1 in 740) and Portsmouth (1 in 710). The contrast between the two sets is noteworthy; as is the comparatively high proportion of 1 in 749 for the Isle of Wight and which, apart from the enthusiasm carried into the work, may be explained by the smallness of the area (147 square miles). It may be that the reason for Wiltshire's comparatively low proportion (1 in 2,548) is the absence of any figures relating to its largest town, whereas the proportion from each of the four other Counties contains figures from at least one Borough. Oxford's comparatively high proportion (1 in 1,700) is doubtless due to the many years' standing of its clinic and the lead it has taken in this line of treatment. If the contrast to which we have been drawing attention is not accidental, and we do not think it is, it possibly suggests the desirability of the establishment of additional Centres in more or less rural areas and effort to hold the sessions at hours specially convenient to those wishful to attend.

#### FINANCE.

As indicated on page 90 of our last Report, we have issued to Local Authorities revised forms of costing returns in respect of Mental Hospitals and Mental Deficiency Institutions. These have been completed and returned for the financial year ending 31st March, 1933, in respect of 69 of the Mental Hospitals, and the results have been collated and circulated to the Authorities. The remaining Authorities have now made the necessary adjustments and, for the year ending 31st March, 1934, a return of expenditure in the revised form will be available from all the Local Authorities. In view of the position indicated above, it has not been practicable to include in the present Report the usual statistics relating to expenditure and average weekly cost per head in respect of the County and Borough Mental Hospitals.

## II. MENTAL DEFICIENCY.

### 1. NUMBERS UNDER CARE.

The mentally defective patients under care on 1st January, 1934, numbered 70,764 (males 35,835, females 34,929); the percentage distribution of the sexes being—males 50·6, females 49·4. Included in this total are the cases under statutory supervision, which numbered 31,921 (males 16,855, females 15,066).

A table showing the distribution of the patients under care is given on the following page. It is of interest to note that of the total of 35,794 patients who were in institutions 17 per cent. (males 20 per cent., females 14 per cent.), were under 16 years of age.

During 1933 there were increases of 35 in the State Institution, 2,001 in Certified Institutions, 382 in Public Assistance Institutions and Municipal General Hospitals approved under Section 37, 28 in Approved Homes, 250 among those under Guardianship or Notified and 2,186 among those under Statutory Supervision, while there was a decrease of 11 in Certified Houses. These changes resulted in a net increase of 4,871 under care.

The distribution of defectives under care on January 1st, 1924 and 1934 was as follows:—

	1st January, 1924.	1st January, 1934.
In Institutions provided under the Mental Deficiency Act ...	17,104	35,794
Under Guardianship or Notified	538	3,049
Under Statutory Supervision ...	10,825	31,921

Nearly 70 per cent. of the patients receiving institutional care on 1st January, 1934, were accommodated in Certified Institutions (Sec. 36): the distribution of patients in these institutions according to the conditions under which they were received was as follows:—

—	Males.	Females.	Total.
Received under the provisions of the Mental Deficiency Acts — — — — —	11,126	11,379	22,505
Received outside the provisions of the Mental Deficiency Acts:—			
Sent by Local Education Authorities —	738	494	1,232
Sent under the Children and Young Persons Acts, 1908 to 1932 — —	45	43	88
Sent by Poor Law Authorities — —	187	359	546
Sent by Relatives or others — —	20	103	123
Total — — — —	12,116	12,378	24,494

The number of cases sent to these Institutions by Poor Law authorities showed a decrease of 163 as compared with the numbers so returned last year. There has been a fairly gradual decline in these cases which, ten years ago, numbered 1,121.



SUMMARY of MENTALLY DEFECTIVE PATIENTS on the books of INSTITUTIONS and under GUARDIANSHIP or Notified on 1st January, 1934.

Where maintained.	Received under the Mental Deficiency Acts, 1913 to 1927.							Received outside the Mental Deficiency Acts.			Total of all Mental Defectives in Institutions and under Guardianship or Notified.						
	Under Orders (secs. 6-9).		Not under Orders ( sec. 3).		Total.												
	Non-criminal.		Criminal.		M.	F.	T.	M.	F.	T.	M.	F.	T.				
	M.	F.	M.	F.													
In the State Institution -	277	360	438	142	6	8	721	510	1,231	—	—	990	—	—	721	510	1,231
In Certified Institutions -	8,411	10,372	1,819	468	896	539	11,126	11,379	22,505	999	1,989	12,116	12,378	24,494	12,116	12,378	24,494
In Approved (sec. 37) In- stitutions -	3,791	4,770	518	118	24	41	4,333	4,929	9,262	—	—	—	—	—	4,333	4,929	9,262
In Certified Houses -	2	7	—	—	91	115	93	122	215	—	—	331	261	592	93	122	215
In Approved Homes -	—	—	—	—	—	—	—	—	—	331	592	331	261	592	331	261	592
Under Guardianship or Notified -	1,190	1,502	79	15	14	9	1,283	1,526	2,809	103*	137*	103*	137*	240*	1,386	1,663	3,049
Total -	13,671	17,011	2,854	743	1,031	712	17,556	18,466	36,022 (a)	1,424	1,397	1,424	1,397	2,821	18,980	19,863	38,843†

(a) Of these cases approximately 1,778 were on Licence from Certified Institutions and 66 from Guardianship.  
 \* Notified cases (sec. 51).

† In addition to the patients in Institutions and under Guardianship or Notified, there were on the same date 31,921 patients (16,855 males, 15,066 females) under Statutory Supervision (sec. 30 (b)).

The proportion of patients in Certified Institutions who are received under the provisions of the Mental Deficiency Acts, as compared with the proportion received outside the Acts, is steadily increasing, as is shown by the following table :—

Year. (1st Jan.)	Under the provi- sions of the Acts.	Outside the Acts.	Total.	Percentage under the Acts.
1918	4,242	2,147	6,389	66·4
1923	7,891	2,126	10,017	78·8
1928	12,197	1,902	14,099	86·5
1933	20,355	2,138	22,493	90·5
1934	22,505	1,989	24,494	91·9

## 2. ASCERTAINMENT.

The annual returns furnished by Local Authorities this year show that on January 1st, 1934, the number of defectives reported to Local Authorities, whether subject to be dealt with or not, was 106,439\* an increase of 4,094 over last year's figures.

The following table shows the increase in cases reported, and the ratio per 1,000 of the population, in two year periods for the last ten years :—

	Increase.	Ratio per 1,000.
1924-26 ... ..	19,067	1·46
1926-28 ... ..	6,042	1·57
1928-30 ... ..	9,917	1·81
1930-32 ... ..	25,871	2·44
1932-34 ... ..	9,129	2·65

It will be seen that an increase is taking place year by year in the number of defectives of whom Local Authorities have taken cognisance as the preliminary step to ascertainment. In spite of the increase, however, this year's figure of 2·65 per thousand still falls short of the estimated figure given in the Wood Committee's report—i.e., 4·52, which was made up as follows :—

*Per 1,000 of population.*

Adults	...	...	...	3·79
Children :				
Imbeciles	...	...	...	0·60
Idiots	...	...	...	0·13
Total ...	...	...	...	4·52†

\* This is the total number of cases known to Local Authorities and is not comparable with the figures given on p. 52.

† It should be noted that Local Authorities have been requested not to include in their returns mentally defective children between the ages of 7 and 16 unless they have been notified by Local Education Authorities under Section 2 (2): including such children the Wood Committee's estimate was 8 per 1,000.



On January 1st, 1934, the number of mental defectives ascertained to be subject to be dealt with, as shown in the annual returns, was 78,438 (1.95 per 1,000).

On January 1st, 1934, the total number "subject to be dealt with" and in receipt of poor relief was 11,100 (indoor relief, 7,082; outdoor relief 4,018) as compared with 11,289 last year. These numbers remain large in spite of the provisions of the Local Government Act by which the duty of the Local Authority to ascertain all cases in their area has been extended to include cases in receipt of poor relief. It is not to be expected that the number of defectives in receipt of indoor relief will be materially decreased until Local Authorities have made more adequate provision in Certified Institutions; but it is difficult to see any reason for the large number still in receipt of out-relief. There are many reasons why financial help, if needed by a mentally defective person, should be given through the Mental Deficiency Committee rather than the Public Assistance Committee and we urge all Local Authorities who have in their area defectives in receipt of out-relief to give the question their serious consideration.

The number of children notified by Local Education Authorities this year is 3,543, a decrease of 234 as compared with last year.

<i>Year.</i>				<i>Number of Notifications.</i>	<i>Increase or decrease.</i>
1933	...	...	...	3,543	—234
1932	...	...	...	3,777	— 3
1931	...	...	...	3,780	+112
1930	...	...	...	3,668	+394
1929	...	...	...	3,274	

Of the 3,543 cases notified during 1933 by Local Education Authorities, 489 have been placed in Institutions, 25 under Guardianship, and 2,418 under Statutory supervision. No action has been taken in 526 cases (14.8 per cent.).

The decrease in the numbers of children notified by Local Education Authorities is disturbing. Ascertainment under the Mental Deficiency Act must depend largely on the thoroughness of the ascertainment by Local Education Authorities of the school children in their area. Whether notifiable mentally defective children receive the care they need depends in the first place, upon the action taken by Local Education Authorities in notifying under Sections 2(2)(a) and 2(2)(b) of the Act and secondly on the provision made by the Mental Deficiency Committee for children who are so notified. As regards the care of mentally defective children leaving ordinary schools at the age of 14, as long as the Local Education Authority has no power to notify and the Mental Deficiency Authority has no power to act, any arrangement must be an informal one between these two Committees of the Council. Until such time as the law is amended so as to cover this serious hiatus in the Act, close and informal co-ordination may obviate some of the dangers

certain to result when the continuity of care is broken between the age of 14 and 16.

The following sample figures show the varying standard of notification adopted in different urban areas. The figure given is the ratio, per 1,000 of the estimated school population, of notifications by the Local Education Authority.\*

<i>Notifications by L.E.A. per 1,000 of school population.</i>				
West Bromwich	...	...	...	2.3
Oxford (no special school)	...	...	...	1.8
Barnsley (no special school)	...	...	...	1.8
Leeds	...	...	...	1.6
Tynemouth	...	...	...	1.6
Birmingham	...	...	...	1.5
Leicester	...	...	...	0.7
London	...	...	...	0.9
Rotherham (no special school)	...	...	...	0.3
Derby	...	...	...	0.2
Wakefield (no special school)...	...	...	...	0.1
Huddersfield	...	...	...	0.1

It is of interest to note the following figures given in a Survey issued by the City of Stoke-on-Trent Education Committee. The number of notifications is not given, but the mean incidence of mentally defective children of all grades in the years 1923–32 was 9 per 1,000 of the school population. The mean incidence of feeble-minded children during the last ten years was 6.83 per 1,000. This last figure compares closely with the figure of 6 per 1,000 given by Sir George Newman in his Annual Report for the year 1928 as the average incidence of feeble-minded children shown by the Annual Returns from Local Education Authorities. It is further pointed out that, in the Wood Committee's report, Dr. Lewis found the mean incidence per 1,000 of the school population of all grades of mentally defective children to be 20.90 in urban and 39.70 in rural areas.

The following authorities have had only five, or less than five, cases notified to them by Local Education Authorities during the past year:—

Isle of Ely C.	Bath C.B.
Chester C.B.	Bournemouth C.B.
Wallasey C.B.	Isle of Wight C.
Derby C.B.	Eastbourne C.B.
Exeter C.B.	Halifax C.B.
Gateshead C.B.	Huddersfield C.B.
West Hartlepool C.B.	Rotherham C.B.
Southend-on-Sea C.B.	Wakefield C.B.
Hereford C.	Anglesey C.
Canterbury C.B.	Brecknock C.
Newport C.B.	Caernarvon C.
Soke of Peterborough C.	Denbigh C.
Oxford C.	Merioneth C.
Rutland C.	Pembroke C.

\*A rough estimate of the school population has been obtained by taking one-eighth of the total population in each area.



The returns show that not a single case has been notified by the Local Education Authority in the following areas in the year 1933 :—

Lincoln C.B.  
Great Yarmouth C.B.  
Flint C.

Merthyr Tydfil C.B.  
Montgomery C.  
Radnor C.

The following table shows the proportion, per 1,000 of the population of the area, of defectives reported to Local Authorities; of defectives ascertained to be subject to be dealt with; and of defectives receiving institutional care.

It will be seen that although eight now exceed the estimate of the Wood Committee (4.52 per 1,000 see p. 54), there are still 11 who have knowledge of less than 1.50 per 1,000.

					<i>Reported.</i>	<i>Ascertained to be subject to be dealt with.</i>	<i>In Institu- tions.</i>
Cardigan C.	...	...	...	...	7.13	1.37	0.13
Walsall C.B.	...	...	...	...	5.83	3.80	2.02
Devon C.	...	...	...	...	5.78	2.22	1.06
Rutland C.	...	...	...	...	4.91	4.91	1.27
Plymouth C.B.	...	...	...	...	4.90	3.49	1.13
Suffolk, E. and W.	...	...	...	...	4.78	2.53	0.68
Somerset C.	...	...	...	...	4.71	2.95	1.48
Nottingham C.B.	...	...	...	...	4.57	4.48	0.72
Shropshire C.	...	...	...	...	4.44	2.32	0.66
Ipswich C.B.	...	...	...	...	4.21	3.74	1.58
Cumberland, Westmorland and Car-							
lisle C.B.	...	...	...	...	4.13	1.92	0.78
Reading C.B.	...	...	...	...	4.01	2.63	0.60
Wiltshire C.	...	...	...	...	4.00	2.95	1.15
Berkshire C.	...	...	...	...	3.97	1.62	0.93
Bristol C.B.	...	...	...	...	3.91	3.91	1.10
Cambridge C.	...	...	...	...	3.89	2.10	0.82
Hertford C.	...	...	...	...	3.87	2.59	0.77
Oxford C.	...	...	...	...	3.83	1.73	0.26
Darlington C.B.	...	...	...	...	3.78	1.65	0.54
Radnor C.	...	...	...	...	3.72	3.48	0.43
Merioneth C.	...	...	...	...	3.70	2.59	0.62
Oxford C.B.	...	...	...	...	3.69	2.45	1.17
London C.	...	...	...	...	3.68	2.51	1.30
Birmingham C.B.	...	...	...	...	3.67	3.62	1.62
Burton on Trent C.B.	...	...	...	...	3.59	1.81	0.42
Leeds C.B.	...	...	...	...	3.52	2.89	1.11
Cornwall C.B.	...	...	...	...	3.35	1.96	0.45
Smethwick C.B.	...	...	...	...	3.34	3.16	0.74
Essex C.	...	...	...	...	3.29	1.69	0.43
York C.B.	...	...	...	...	3.29	2.08	1.17
Leicester C.	...	...	...	...	3.24	1.24	0.50
Birkenhead C.B.	...	...	...	...	3.23	1.70	0.35
Portsmouth C.B.	...	...	...	...	3.21	2.00	0.61
Stafford C.	...	...	...	...	3.10	1.75	0.33
Anglesey C.	...	...	...	...	3.09	3.09	0.47
Hereford C.	...	...	...	...	3.08	3.08	0.40
Sunderland C.B.	...	...	...	...	3.02	2.31	0.43

				<i>Reported.</i>	<i>Ascertained to be subject to be dealt with.</i>	<i>In Institu- tions.</i>
Southampton C.B.	...	...	...	2.91	1.75	0.45
West Bromwich C.B.	...	...	...	2.91	2.59	1.72
Dewsbury C.B....	...	...	...	2.91	1.58	0.50
Newport C.B.	...	...	...	2.88	1.14	0.30
Canterbury C.B.	...	...	...	2.84	2.31	0.95
Rotherham C.B.	...	...	...	2.81	1.72	0.60
Pembroke C.	...	...	...	2.80	1.64	0.46
Bath C.B.	...	...	...	2.79	2.11	0.96
Dorset C.	...	...	...	2.77	1.89	0.98
Northampton C.B.	...	...	...	2.77	0.77	0.26
Southampton C.	...	...	...	2.75	2.10	0.71
Bradford C.B.	...	...	...	2.75	2.47	0.84
Kingston-upon-Hull C.B.	...	...	...	2.71	2.21	0.63
Wolverhampton C.B.	...	...	...	2.70	1.76	0.75
Sheffield C.B.	...	...	...	2.68	2.07	0.79
Derby C.B.	...	...	...	2.65	1.29	0.35
Monmouth C.	...	...	...	2.65	2.31	0.41
Brecknock C.	...	...	...	2.65	2.65	0.28
Leicester C.B.	...	...	...	2.64	1.82	1.08
Gloucester C. and Gloucester C.B.	...	...	...	2.58	1.68	0.54
Norfolk C.	...	...	...	2.55	2.37	0.85
Barnsley C.B.	...	...	...	2.52	1.72	0.33
Soke of Peterborough C.	...	...	...	2.51	2.49	0.75
Warwick C.	...	...	...	2.51	1.61	0.80
Parts of Lindsey C.	...	...	...	2.50	1.78	0.46
Worcester C.B....	...	...	...	2.49	1.50	0.54
Exeter C.B.	...	...	...	2.46	2.42	1.03
Dudley C.B.	...	...	...	2.39	1.98	0.44
Middlesbrough C.B.	...	...	...	2.37	2.30	0.52
Swansea C.B.	...	...	...	2.37	1.46	0.21
Cardiff C.B.	...	...	...	2.36	1.86	0.70
East Ham C.B.	...	...	...	2.35	1.96	0.66
West Ham C.B.	...	...	...	2.35	2.35	0.72
Parts of Holland C.	...	...	...	2.35	2.20	0.19
Isle of Wight C.	...	...	...	2.34	1.89	0.50
Grimsby C.B.	...	...	...	2.30	1.83	0.38
Buckingham C.	...	...	...	2.28	1.92	0.97
Southend-on-Sea C.B.	...	...	...	2.27	1.80	0.45
Derby C.	...	...	...	2.25	1.51	0.33
Glamorgan C.	...	...	...	2.25	2.25	0.44
Worcester C.	...	...	...	2.24	1.36	0.58
Lincoln C.B.	...	...	...	2.22	1.59	0.21
Tynemouth C.B.	...	...	...	2.22	2.22	0.88
Durham C.	...	...	...	2.16	2.16	0.38
Great Yarmouth C.B.	...	...	...	2.16	1.44	0.54
Denbigh C.	...	...	...	2.15	2.10	0.57
Yorks, East Riding C.	...	...	...	2.10	1.41	0.72
Newcastle-on-Tyne C.B.	...	...	...	2.09	2.05	1.19
Merthyr Tydfil C.B.	...	...	...	2.09	1.46	0.18
Yorks, North Riding C.	...	...	...	2.05	1.06	0.43
Montgomery C.	...	...	...	2.04	1.96	0.81
Chester C.B.	...	...	...	2.03	1.98	0.73
Lancashire Mental Hospitals Board	...	...	...	2.03	1.63	0.62
Northampton C.	...	...	...	2.03	1.70	0.33
Hastings C.B.	...	...	...	2.03	1.79	0.57



				<i>Reported.</i>	<i>Ascertained to be subject to be dealt with.</i>	<i>In Institu- tions.</i>
Caernarvon C.	...	...	...	2.02	1.47	0.35
Kent C.	...	...	...	1.95	1.43	0.58
Norwich C.B.	...	...	...	1.94	1.87	0.81
East Sussex C.	...	...	...	1.92	1.21	0.45
Eastbourne C.B.	...	...	...	1.91	1.91	0.71
Flint C.	...	...	...	1.90	1.90	0.44
Northumberland C.	...	...	...	1.87	1.76	0.59
Isle of Ely C.	...	...	...	1.85	0.98	0.32
Coventry C.B.	...	...	...	1.80	1.71	0.28
Nottingham C.	...	...	...	1.79	1.25	0.24
Croydon C.B.	...	...	...	1.79	1.73	0.49
Gateshead C.B....	...	...	...	1.71	1.57	0.57
Halifax C.B.	...	...	...	1.68	1.68	0.96
Carmarthen C.	...	...	...	1.65	1.65	0.26
Middlesex C.	...	...	...	1.64	1.46	0.75
Yorks, West Riding C.	...	...	...	1.61	1.45	0.51
Doncaster C.B....	...	...	...	1.56	1.56	0.62
Chester C.	...	...	...	1.55	1.47	0.23
Surrey C.	...	...	...	1.54	1.32	0.51
Brighton C.B.	...	...	...	1.51	1.37	0.25
Wakefield C.B.	...	...	...	1.39	0.90	0.42
West Sussex C.	...	...	...	1.34	1.30	0.44
Parts of Kesteven C.	...	...	...	1.31	1.28	0.24
Wallasey C.B.	...	...	...	1.26	0.89	0.55
Bedford C.	...	...	...	1.24	0.99	0.38
Stoke-on-Trent C.B.	...	...	...	1.13	1.00	0.47
Huddersfield C.B.	...	...	...	1.12	0.89	0.45
West Hartlepool C.B.	...	...	...	1.05	1.05	0.32
South Shields C.B.	...	...	...	0.99	0.78	0.39
Huntingdon C.	...	...	...	0.91	0.78	0.23
Bournemouth C.B.	...	...	...	0.87	0.80	0.37

## 3. ACCOMMODATION.

A substantial increase has again taken place this year in the number of beds in Certified Institutions under Section 36 of the Mental Deficiency Act; 2,254 new beds have been provided by Local Authorities and the following accommodation was available on January 1st, 1934, under Sections 36 and 37 of the Act.

	<i>Number of beds.</i>
Certified Institutions provided by Local Authorities (Section 36) ... ..	15,426
Certified Institutions provided by other bodies (Section 36)	8,951
Public Assistance Institutions (Section 37)...	9,974
Total ... ..	34,351

The number in residence in these Institutions on January 1st, 1934, was 33,756 (Certified Institutions, 24,494; Public Assistance Institutions, 9,262). The discrepancy between these

totals is to be accounted for in various ways and in actual practice the vacancies which appear on paper are, for the most part, not available for out-county cases. In addition to the accommodation already provided many authorities are proceeding by degrees and in accordance with their financial means with colony schemes capable of providing ultimately for their entire needs.

In the meantime increased colony provision remains an outstanding need in most areas. Independent testimony to the far reaching results of the present shortage of beds is given by the National Society for the Prevention of Cruelty to Children in a memorandum submitted to the Departmental Committee on Sterilization summarizing the facts found by their Inspectors in the course of their work.

Discussing the lack of institutional provision for defectives they say "It is disturbing to find that three-fifths of the Inspectors state there is a deficiency in their areas of institutions for the care of feeble-minded children. They are constantly faced with cases where such children are regarded as something of a danger to younger members of the family. Even where the parents are willing for them to be placed in an institution, it is frequently impossible to do anything, for the available accommodation is filled. Also the delay which often occurs before children can be placed occasions the parents to change their minds and their consent is withdrawn." The Officer working in the Chichester district of West Sussex states "There are no Institutions here for M.D. children; arrangements have to be made by the County Councils with other Counties who have Institutions. Delay is caused by waiting for vacancies. It is also rendered difficult to obtain parents' consent to the children going into Institutions, because they are going so far away that it will be impossible to visit them." In North Devon, the North Riding of Yorkshire, Gloucestershire, and West Suffolk special mention is made of the inadequacy of institutional accommodation and of the detrimental effects of delayed admissions both to the children themselves and to other members of the family.

Other defectives, besides those living in the community, suffer from this lack of colony beds. Valuable as the accommodation in Public Assistance Institutions has been to Local Authorities in the time of financial stress, much of it was recognized as a makeshift arrangement. By degrees the smaller certificates are lapsing but there are still Section 37 Institutions where young high grade defectives are detained in mixed wards with senile patients, epileptics, and cases sent in for observation under the Lunacy Acts. None of these groups can be treated properly in such close association and the development of colonies for young and trainable defectives is, we think, one means whereby the Local Authority can improve classification of Public Assistance Institutions.



*The Present Position with regard to Accommodation.*

(a) *Beds provided by Local Authorities.* The total number of beds in Certified Institutions provided by Local Authorities is 15,426. Of this number 2,254 were provided during the past year. The principal changes during 1933 related to the provision of a complete institution of 600 beds at Cell Barnes Colony; the extension of Westwood Colony, Coldeast Colony, Little Plumstead Hall with the ancillary premises at Heckingham; the adaptation of the mansions at Borocourt and Brandesburton Hall; the provision of pavilions at St. Catherine's Colony and Shotley Bridge Colony; the erection of temporary buildings at Oulton Hall; and the transfer to the Mental Deficiency service of the Caistor Institution, Lindsey; the Broughton Institution, Flintshire; Box House, Axminster; and Western Lodge, Crediton.

Seventy-three Authorities have provided accommodation under Section 30(c) of the Act of 1913 as follows:—

	<i>Beds</i>		<i>Beds</i>
Bedfordshire and North-		Devon C.	
amptonshire Joint		Box House, Axminster...	25
Board (Bedford C.,		Stoke Lyne ... ..	52
Northampton C. and		Western Lodge, Crediton	50
Northampton C.B.)		Flintshire C.	
Bromham House ...	24	Broughton ... ..	56
Birmingham C.B.		Glamorgan C.	
Coleshill Hall ... ..	300	Drymma Hall ... ..	79
Monyhull Colony ...	1,243	Hensol Castle ... ..	100
Bradford C.B.		Halifax C.B.	
Westwood Colony, with		Craigie Lea ... ..	28
ancillary premises (Ash-		Hampshire Mental Health	
field) ... ..	290	Institutions Joint	
Brighton C.B.		Committee (South-	
Laughton Lodge ...	34	ampton C., Bourne-	
Bristol C.B.		mouth C.B. and South-	
Hortham Colony ...	608	ampton C.B.)	
Buckingham C.		Coldeast Colony ...	370
Manor House, Aylesbury	99	Tatchbury Mount ...	56
Bucks, Oxon and Reading		Herts C.	
Joint Board		Cell Barnes Colony ...	600
Borocourt ... ..	207	Ipswich C.B.	
Cheshire Joint Board (Ches-		Handford Home ...	22
ter C. and Chester,		Kent C.	
Birkenhead and Wal-		Leybourne Grange ...	71
lasey C.Bs.)		West View, Tenterden ...	180
Cranage Hall ... ..	62	Kingston-upon-Hull C.B.	
Croydon C.B.		Tilworth Grange ...	83
6, Morland Road ...	20	Lancashire Mental Hospitals	
Cumberland, Westmorland		Board	
and Carlisle Joint		Brockhall ... ..	398
Committee.		Calderstones ... ..	2,328
Dovenby Colony ...	185	Leeds C.B.	
Denbigh C.		Kepstorn... ..	40
Coed Du Hall ... ..	72	Meanwood Park Colony	431
Derby C.B.		Leicester C.B.	
Thornhill... ..	39	Leicester Frith ... ..	277

	<i>Beds</i>		<i>Beds</i>
Leicestershire and Rutland Joint Board		Stoke-on-Trent C.B.	
Stretton Hall ... ..	50	Stallington Hall... ..	77
Lindsey C.		Surrey C.	
Caistor ... ..	108	Botleys Park, with an- cillary premises (Mur- ray House) ... ..	353
London C.		Clerk's Croft ... ..	102
Brunswick House ... ..	75	Swansea C.B.	
Farmfield ... ..	141	Llwyn Eryr Training Home ... ..	27
Manor ... ..	1,292	Walsall and West Bromwich Joint Board	
South Side Home ... ..	80	Great Barr Park Colony	683
Middlesex C.		Warwick C.	
Middlesex Colony ... ..	320	Weston Colony ... ..	58
Bramley House ... ..	50	West Ham C.B.	
Craufurd Home ... ..	116	South Ockendon Colony	134
Newcastle-on-Tyne C.B.		West Wales Joint Board (Cardigan, Carmarthen, Pembroke, Brecon and Radnor Cs.)	
Shotley Bridge Colony	440	Pantglas Hall ... ..	117
Norfolk C.		Wiltshire C.	
Little Plumstead Hall, with ancillary premises (Heckingham Institu- tion) ... ..	432	Pewsey Colony ... ..	81
North-Eastern Counties Joint Board (Darling- ton, Middlesbrough, South Shields, Sunder- land, Tynemouth and West Hartlepool C.Bs.)		Yorkshire :—	
Prudhoe Hall Colony ... ..	422	East Riding and York Joint Board	
Northumberland C.		Brandesburton Hall ... ..	121
Cowpen Hall ... ..	32	Mid-Yorkshire Joint Board (Leeds, York, Halifax, and Kingston- upon-Hull C.Bs.)	
Greenholme Institution, Haltwhistle ... ..	51	Mid-Yorks Institution ... ..	214
Rothbury ... ..	44	South-West Yorkshire Joint Board (Barnsley, Dewsbury, Doncaster, Halifax, Huddersfield, Rotherham and Wake- field C.Bs.)	
Norwich C.B.		St. Catherine's Colony ... ..	180
Eaton Grange ... ..	37	West Riding C.	
Nottingham C.B.		Oulton Hall ... ..	264
Aston Hall ... ..	108	Rawcliffe Hall ... ..	121
Sheffield C.B.		The Mansion, Kirkburton	60
Cliffe House ... ..	29		
Hollow Meadows ... ..	58		
Wales Court ... ..	50		
Somerset C.			
Sandhill Park, with an- cillary premises (Cam- bridge House, West End House and Yatton Hall) ... ..	470		

In addition the Gloucestershire (County and City) Joint Committee has contributed in accordance with the terms of Section 38(1)(b) of the Act of 1913 to the provision of beds at Stoke Park Colony and Brentry Colony respectively ; beds are reserved at the Royal Eastern Counties Institution for patients from Essex, Southend, East and West Suffolk Joint Committee, Ipswich and Cambridgeshire ; at the Royal Western Counties Institution for patients from Devon, Exeter, Plymouth, Dorset, and Somerset ; at Hortham Colony (Bristol) for patients from Bath ; at Little Plumstead Hall and the Heckingham Institution



(Norfolk) for patients from Gt. Yarmouth and Norwich ; at Shotley Bridge Colony (Newcastle-on-Tyne) for patients from Gateshead ; at Hensol Colony (Glamorgan) for patients from Cardiff, Merthyr Tydfil and Swansea ; at South Ockendon Colony (West Ham) for patients from East Ham ; and at Botleys Park (Surrey) for patients from Croydon. The Easthampstead and Bradfield Public Assistance Institutions (Berks) are being adapted in sections for the accommodation of defectives with a view to the ultimate transfer of the institutions to the Mental Deficiency service, while separate provision has been made at the Caersws and Forden Public Assistance Institutions (Montgomeryshire) for certain types of defectives, the remaining cases chargeable to the Authority being sent to Certified Institutions elsewhere under contract.

Plans of the following schemes have received statutory approval and the buildings are in course of erection :—

	<i>Beds</i>
Pewsey Colony (Wiltshire C.) ... ..	120
St. Catherine's Colony, Doncaster (South-West Yorkshire Joint Board)... ..	120
Brockhall (Lancashire Mental Hospitals Board) ... ..	360
Weston Colony (Warwick C.) ... ..	81
Coldeast Colony (Hampshire Joint Mental Health Institutions Committee) ... ..	150
Prudhoe Hall Colony (North-Eastern County Boroughs Joint Board) ... ..	200
Middlesex Colony, Shenley (Middlesex C.) ... ..	527
Hensol Colony (Glamorgan C.) ... ..	320
Royal Eastern Counties Institution (Cambridge C., Essex C., and East and West Suffolk Joint Committee)	444
Leybourne Colony (Kent C.) ... ..	300
Cranage Colony (Cheshire Joint Board) ... ..	314
Aston Hall (Nottingham C.B.) ... ..	237
School Aycliffe Colony (Durham C.) ... ..	360
Coleshill Hall (Birmingham C.B.) ... ..	120
Easingwold Institution (Yorkshire, North Riding C.) ...	90
Harmston Hall (Lincolnshire Joint Board) ... ..	254
St. Columb Major (Cornwall C.) ... ..	108
Western Lodge, Crediton (Devon C.) ... ..	50
Makeney House (Derby C.) ... ..	80
Leicester Frith (Leicester C.B.) ... ..	60

The following schemes have been approved in principle :—

	<i>Beds.</i>
Tilworth Grange (Kingston-upon-Hull C.B.) ... ..	67
Royal Western Counties Institution—Langdon Farm (Devon C., Exeter C.B., Somerset C., Dorset C. and Plymouth C.B.) ... ..	320
Prudhoe Hall Colony (North Eastern Counties Joint Board)	34
Tatchbury Mount (Hampshire Mental Health Institutions Joint Committee) ... ..	100
Winestead Hall (Kingston-upon-Hull C.B.) ... ..	130
Bromham House (Beds and Northants Joint Board) ...	260
Northgate Colony (Northumberland C.) ... ..	300
Marston Green Cottage Homes (Birmingham C.B.) ...	380
Brandesburton Hall (East Riding and York Joint Board)	60
Portsdown Colony (Portsmouth C.B.) ... ..	500

Further schemes were under consideration by the Board at the end of the year.

The following Local Authorities have not yet provided institutional accommodation, although some of them have schemes under consideration :—

Anglesey C.	Merioneth C.
Burton-on-Trent C.B.	Monmouth C.
Caernarvon C.	Newport C.B.
Coventry C.B.	Nottingham C.
Dudley C.B.	Salop C.
Eastbourne C.B.	Smethwick C.B.
East Sussex C.	Soke of Peterborough C.
Hastings C.B.	Stafford C.
Hereford C.	West Sussex C.
Huntingdon C.	Wolverhampton C.B.
Isle of Ely C.	Worcester C.B.
Isle of Wight C.	Worcester C.

*(b) Other Beds Provided.*

The following accommodation was available on the 1st January last in addition to that provided by Local Authorities in Certified Institutions under Section 36 :—

In Certified Institutions provided by other bodies (including Royal Eastern Counties Institution, Royal Albert Institution, Royal Western Counties Institution, Royal Earlswood Institution, Midland Counties Institution, Stoke Park Colony, Brentry Colony, Whittington Hall and The Mary Dendy Home, Sandlebridge) ... ..	8,951
Public Assistance Institutions approved under Section 37 of the Mental Deficiency Act (including Darenth Training Colony, the Caterham, Fountain and Leavesden Mental Hospitals and Seafeld House) ...	9,974

Plans of a villa for 50 male patients at Barvin Park Certified Institution, Northaw, near Potter's Bar, Herts (Westminster Diocesan Education Fund) and for the adaptation of St. Joseph's Girls' School, Howard Hill, Sheffield (The Sisters of the Charity of St. Vincent de Paul) for the accommodation of 50 female patients, were approved during the year.

*(c) Hostels.*

The following Institutions function solely as hostels and receive patients, in the first instance, on licence from other Certified Institutions :—

Eagle House, Mitcham (Surrey Voluntary Association for Mental Welfare). (Women.)
Royal Fort Home, Bristol (The Committee of Management). (Women.)
Royal Hostel, Elstead (Surrey Voluntary Association for Mental Welfare). (Men.)
The Old Rectory, Bath (Bath Voluntary Association for Mental Welfare). (Women.)



Patients are also sent out to daily work from the following Institutions. Those marked \* have separate hostel branches.

- Royal Eastern Counties Institution. (Women.)
- \*The Manor (London C.) (Women.)
- \*Royal Western Counties Institution. (Men and Women.)
- South Side Home (London C.) (Women.)
- Farmfield (London C.). (Men.)
- Brunswick House (London C.) (Men.)
- \*Meanwood Park (Leeds C.B.) (Men and Women.)
- \*The Hermitage (Women.)
- \*Caterham (London C.) (Men.)
- Dungates. (Men.)
- \*Walsham How Home. (Women.)
- \*Monyhull Colony. (Women.)

*(d) Approved Homes† and Certified Houses.‡*

There are now 41 Approved Homes and 7 Certified Houses approved by the Board containing 810 beds and 280 beds respectively. There are 218 vacancies in Approved Homes and 65 in Certified Houses.

It is only fair to those who may be contemplating opening an Approved Home to repeat the warning we gave last year. In our experience there is no demand for more places than already exist in Homes where the charges range from £100 to £200 yearly, and in Homes for children where a lower charge is made it is found to be difficult to maintain a high standard of nursing, training and care. There are excellent Homes in existence which meet the needs of the diminishing number of parents who can afford to send their child to a private Home, whilst the passing of the Local Government Act and the increase in the number of Institutions provided by Local Authorities are likely to decrease the use made by Public Assistance Committees of Approved Homes for mentally defective children.

#### 4. COMMUNITY CARE.

It should be the aim of Local Authorities to reduce to a minimum the number of defectives who need be retained permanently in Institutions. How this can be done is a question of special importance at the present time when the shortage of institutional accommodation is preventing many defectives from receiving the form of care they may need. Every bed that is freed can be filled many times over, and with cases which

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† An Approved Home is one in which defectives are received and supported wholly or partly by voluntary contributions or for private profit, and in respect of which approval has been granted by the Board of Control under Section 50.

‡ A Certified House is one in which defectives are received by the owner thereof for his private profit, and in respect of which a certificate has been granted by the Board of Control under Section 49.



cannot be properly cared for outside ; as long as these conditions persist the allocation of every bed is a crucial question and it is important to consider how methods of community care can be used to the fullest advantage.

We find that the activities of Local Authorities vary as widely in this respect as they do in the provision of institutions. By ignoring the existence and the needs of defectives living in the community some Authorities may avoid immediate expenditure by the Mental Deficiency Committee, at the expense, we believe, of the public funds in other directions and of the welfare of future generations. Other authorities are satisfied with an organization providing for routine supervisory visits and a written report stating whether the defective is well cared for or has got into trouble. There are also Authorities, increasing every year in number, who supplement home visiting with practical facilities for training, employment, occupation, and recreation. Community care in such areas passes beyond passive supervision into an active and constructive form of social treatment. The additional work involved requires the appointment of trained officers ; but we are convinced, as the result of examination of the work of Local Authorities and Voluntary Associations in different areas, that the additional expenditure is justified by the results.

The visitor to a home where there is a mentally defective member of the family is first of all struck by the constantly recurring difficulties which the parent or guardian has to face.

These difficulties may be insuperable and in many cases institutional training or care is the only solution. On the other hand it is often the failure of the Local Authority to provide timely and active help that necessitates removal from home to an institution. Guardians and employers of defectives, other than parents, also need help ; and suitable guardians are not at first easy to find. Responsible persons will only accept the care of a defective if they know that help will be at hand if needed. Where this help is assured and where the work of finding guardians, providing training and employment, and of visiting is delegated to an experienced officer, it has been shown that suitable guardians can be found and that defectives who would otherwise be occupying beds in an institution can live safely and even usefully outside.

Vigilant social work is most necessary too from the point of view of preventing the abuses that may arise from laxity and indiscriminate use of community care.

Many Local Authorities are, therefore, considering what are the best methods to employ in order to enable certain defectives to remain in the community, or to return to the community after institutional training, without harm to themselves or to others. Clearly it is not enough only to watch and visit. Practical help must be available in accordance with the needs of the particu-



lar defective and of his parents or guardian. The kind of help needed may be briefly summarized :—

Advice of practical and specialized nature as to treatment, medical care and nursing, training and control of defectives.

Facilities for providing for the training and employment of defectives through Occupation Centres, home teachers, Industrial Centres.

Facilities for recreations, clubs, etc.

A measure of control which can be given to parents or guardians by means of guardianship or licence.

Relief from entire responsibility which can be given to parents or guardians by licence and the knowledge that the institution is prepared to re-admit the defective at short notice.

Financial help.

In reporting on the extent to which use is now being made of the different forms of community care, we made special reference to the way in which these various needs can be met. Cases are also included to illustrate, in particular instances, how community care has proved beneficial.

#### (a) *Licence.*

On January 1st, 1934, there were 1,778 defectives on licence, 933 males and 845 females; an increase of 186 on last year's figures.

Licence is the link between institutional and community care. In an institution it is often difficult to judge of a defective's capacity to adapt to community life and licence is the simplest and safest means of giving him a trial outside, either with an employer, with foster parents or in his own home.

In some cases, where no good purpose will be served by continuing the Order, licence leads to discharge; some licensed patients are later transferred to guardianship whilst others may advantageously remain for long periods on licence. Prolonged licence is specially valuable for defectives placed on licence with employers or foster parents who are more likely to take them if they know that they can appeal to the institution in an emergency such as illness or unemployment.

The position as regards licence has not materially changed since last year when we gave figures showing that 9 per cent. to 10 per cent. of the patients at the Manor, the Royal Western Counties Institution and the Royal Eastern Counties Institution were out on licence, and described the active system of training, hostel treatment and subsequent supervision successfully employed in these areas. Other old established Institutions still remain where no active provision has been made and where the use of licence is still confined to a small number of patients licensed to the care of their parents. Amongst these Monyhull Colony has this year opened a small Hostel which it is hoped will lead to more active co-ordination between institution and community care work. Several of the new Colonies have licence schemes



under consideration and we should like here to clear up a misunderstanding that has arisen. We do not advise the managers of institutions to keep empty beds for all the patients out on licence. In an institution of 1,000 beds where there may be 100 patients out on licence it is rarely found that more than three or four are recalled at the same time and amongst this number of beds, even if slight overcrowding is temporarily necessary in an emergency, it is not a serious matter.

Increasing activity has been shown this year in the licensing of patients from institutions to licensees living within reach of occupation centres, industrial centres and clubs, notably by the Voluntary Associations in Kent, Suffolk, Devonshire and Somerset and by the Central Association for Mental Welfare Guardianship Association which now makes it a rule only to board out children within reach of an occupation centre.

We are satisfied that the framework of a sound licence scheme consists in what we have called constructive forms of community care, i.e., hostels, the active search for licensees, facilities for training in the case of children and low grade patients and for employment in the case of the higher grade, as well as constant supervision by a person who knows the defective and understands his or her needs and limitations.

The extent to which risks can be minimized by these means is shown by figures supplied from the Royal Eastern Counties Institution. On January 1st, 1934, there were 153 patients on licence—10 per cent. of the number on the books, cared for as shown below :—

In care of friends working for wages	...	34
Living-in service away from home	...	18
Working at home or with foster parents	...	58
At home or with foster parents, not able to work	... ..	9
In simpler type of Institution	...	34
		<hr/> 153 <hr/>

During the year 10 of the cases on licence were discharged ; 19 returned to the institution for a holiday and 4 because of illness ; 30 were recalled for various other reasons. Among the 30 who were recalled unsatisfactory behaviour was the reason in eight cases, but only in one of these it took the form of sexual misconduct. With the remaining seven the offences were comparatively trivial ones such as cheekiness or running away. In one case only was a patient recalled because of the unsuitability of the foster parent. The remainder returned because of a change of situation or foster parent or because of inefficiency in a situation. Looking back at the figures for the past six years, during which time there was an average of about 110 patients out on licence, only two had to be recalled because of sexual misconduct.



But we must again point out that these results cannot be attained without much work and some expense.

In some institutions there is a tendency to allow licence to degenerate into the passive consent to defectives with a wage earning capacity returning home at their parents' request, little regard being paid to social capacity or to home surroundings. In these areas it is noticeable that licensed defectives appear frequently before the courts, girls return pregnant to the institution and mentally defective men and women marry who have proved unable to maintain themselves or to manage their own affairs. The best supervision in the world is powerless in these cases to avert trouble and, through misuse, the whole system of licence falls undeservedly into disrepute.

The following cases illustrate some of the advantages and difficulties of licence.

Z. was a boy with a bad record who attended an ordinary school and was admitted to an Institution under Section 8 at the age of 16, having been twice charged with stealing. After three years' training in the Institution continuous improvement in his behaviour was reported and he was sent home to his parents on licence. He found work but did not keep it and as he again became difficult to manage at home he was recalled to the Institution. Six months later he was again sent out on licence, the Voluntary Association having in the meantime helped the parents to move to a neighbourhood where he would be away from his old associates. By the efforts of the Voluntary Association and the active interest of the local visitor enough odd jobs were found to keep him occupied but as the prospect of permanent work in that neighbourhood was small and an opening occurred in a factory near the house of a married sister, he was transferred to her care and is now in regular work. The reports on his behaviour are good. Licence in this case made it easy to recall the boy when he lost work and when trouble might have arisen at home; it satisfied the boy himself and was of definite assistance to his parents. Supplemented by active supervision, it has saved the Local Authority the cost of his maintenance in the Certified Institution after three years' training and has enabled him to be partly self-supporting.

Y. is a woman of 39 who attended a special school but was not brought to the notice of the Local Authority till she was 23. She was then in a Rescue Home with a history of immorality and wandering and was urgently in need of care. Her mother was dead and her father bore a bad character. She was admitted to a Certified Institution where she remained for eight years after which she was sent out on licence to the care of a foster mother. The first attempt failed but not through any misbehaviour on the part of the girl and she was recalled and tried out again. At first she was found to be incapable of earning but after a time she was placed in a situation and for the past three years she has been earning 15/- weekly and is very happy. Licence in this case was the means of testing this woman's capacity by gradual steps and has resulted in her being self-supporting. The immoral life she led up to the age of 23 might have been avoided if she had received the care she needed on leaving the special school.

V. is a man of 34 who was in a Certified Institution from the age 6 to 32. He was then placed out on licence through the Guardianship Association with a woman on a farm who was paid 16/- for his keep. As was to be expected after all those years, he found it very difficult to adapt; he was lonely and disliked the country and the muddy lanes and wanted to go back to the well-ordered life of the Institution. He had a great liking



for nursery garden work and within a month the Guardianship Association had arranged for his employment with a nursery gardener where he remained for two years when he was discharged. His wages at that time were £1 weekly. It is possible that discharge was premature as he is not fit to take full responsibility and his wages were below the normal but the Guardianship Association are still keeping in friendly touch with him. Had it not been for the active steps taken to help him to adapt in the first months after he came out it is almost certain that he would have returned to the Institution and remained there at his own wish.

T: is a girl of 20 whose parents are dead. She has no home and was in a Section 37 Public Assistance Institution. At about the age of 18 she was placed out on licence. She was lonely and unhappy and was transferred to a large girls' school run on institutional lines. There she did well and was transferred at her own wish to private service where she is now earning her own living under a sympathetic mistress. She is very slow and needs much care and supervision in her work. She attends the Club organised by the Guardianship Association on her afternoon off and the Association also arranged for her summer holiday. Without the support that is given by the Guardianship Officer this girl would not have succeeded nor would the mistress have kept her.

*(b) Guardianship (Section 30(d)).*

The number of cases under guardianship on 1st January, 1934, was 2,809, an increase of 251 on last year's figures.

Increase during—1932	...	359
1931	...	326
1930	...	282

Much that we have already said about the need for active and constructive work in relation to licence relates equally to guardianship and to statutory supervision. In the cases cited below guardianship has proved the most suitable method of care either because financial help was required, because of the power it confers upon the guardian or because there was no likelihood of institutional care being required. Such cases must be frequent in all areas and it is to be regretted that the following 16 Local Authorities still have no case under guardianship whilst 23 others have only two or one.

Isle of Ely C.	Kingston-upon-Hull C.B.
Hereford C.	Barnsley C.B.
Huntingdon C.	Doncaster C.B.
Parts of Holland C.	Halifax C.B.
Newport C.B.	Brecknock C.
Great Yarmouth C.B.	Merioneth C.
Burton-on-Trent C.B.	Montgomery C.
Tynemouth C.B.	Radnor C.

X. is a child of 10 who was notified at the age of 7 as ineducable. At the death of her mother she was found to be neglected at home by an unsympathetic stepmother. At the urgent request of her father X. was taken away and placed under guardianship. The first guardian was unable to give her all the attention she needed but she was tried again with a woman who lived within reach of an Occupation Centre and under whose excellent care she developed in every way. She is now clean in her habits, her speech has improved and she is happy and well-behaved. Payment is made for her at the rate of 15/- weekly and clothing.



W. is a man of 34 who lives under guardianship of his widowed mother. He was brought to the notice of the Local Authority at the age of 30 when his mother, who was entirely dependent upon the earnings of two daughters, felt no longer equal to the struggle of keeping the home together. She did not want to part with her son but was obliged to consider the possibility of letting him go to an Institution and breaking up the home. To her great relief the Local Authority made an order placing him under her guardianship with an allowance of 16/- weekly. This arrangement has been a happy one and W. is usefully occupied in helping his mother with the house work. It is typical of many cases where a payment to the relatives saves the need, at any rate for a time, for institutional care.

(c) *Supervision (Section 30 (b)).*

The number of cases under statutory supervision on January 1st, 1934, was 31,921, an increase of 2,186 during the year.

Increase during—1932	...	1,765
1931	...	2,360
1930	...	2,004

Defectives under voluntary supervision numbered 22,665 as compared with 22,537 last year. This latter group includes defectives who are not subject to be dealt with under the Act but in whose case some arrangement has been made for friendly visitation.

Statutory supervision is the means of keeping in touch with defectives who show no immediate need for other forms of care. In relation to mentally defective children leaving school it is of special value as it is the only way of ensuring the continuous care and practical help the great majority need. There is still reason to think that full use is not being made of the 1927 Act which enabled Local Education Authorities to notify to the Mental Deficiency Committee children leaving Special Schools who need supervision as well as those in need of guardianship and institutional care.

According to the returns furnished to us, in the following areas no use at all is being made of this economically and socially important provision under the Mental Deficiency Acts :—

South Shields C.B.	Cardigan C.
Huntingdon C.	Carmarthen C.
Nottingham C.	Merthyr Tydfil C.B.
Merioneth C.	Pembroke C.

The following authorities have less than ten cases under statutory supervision :—

Wallasey C.B.
Dudley C.B.
Caernarvon C.

The following cases illustrate the value of supervision :—

P. is a girl of 19. On leaving the Special Day School at 16 years old she was notified and placed under supervision. She is a presentable and attractive girl of good habits, useful in the home, and easy to manage, but too defective to do remunerative work. She leads a quiet and contented life, attending an Occupation Centre daily. Her mother is a widow and



goes out to work. The only anxiety is caused by the girl's attractiveness coupled with the fact that she is easily led. The mother's care is excellent but her work as a school-cleaner takes her out in the evenings, and on leaving the Centre it was found that the girl returned to an empty house. A year ago, a man made advances to her near her own door. Neighbours reported this at once to the visitor of the Association for Mental Welfare, who asked the police to keep watch and meanwhile arranged for the girl to go to a neighbour each day until the mother's return. The arrangement has worked well, and in this case supervision minimizes the likelihood of harm occurring by ensuring prompt notification to the Local Authority if the need for institutional care arises.

K. is a man of 25, notified as feeble minded by the School Medical Officer in 1924 and placed under statutory supervision. Owing to epileptic fits he has deteriorated mentally during the last few years. He lives with his parents in a poor home and until four years ago spent his time roaming about the village, with no occupation except fishing in the village pond with a jam jar. He was looked upon as an idiot and was bullied by the other boys in the village and his mother was distracted to know how to keep him indoors and amused. The visitor made several attempts to interest him in manual work. Sea grass stool seating was finally tried, and after 4 years regular occupation, K. can now seat stools in two different patterns and with supervision he can stain the frames. He has had several orders from people living near him, who have seen him at work, and he is now contented to stay at home and does not attempt to roam about. All the tools and materials are provided by the Voluntary Association and the defective gets any profit made on the sales. His mother is a thrifty woman and uses the money for his best advantage.

### 5. DAY CENTRES, CLUBS AND HOME TRAINING.

One hundred and eighty-six centres are now functioning (1st January, 1934). These include :—

			<i>Conducted by—</i>	
			<i>Voluntary</i>	<i>Local</i>
			<i>Associations.</i>	<i>Authorities.</i>
Occupation Centres	...	...	102	52
Industrial Centres and Classes	...	...	16	6
Clubs and Evening Classes	...	...	10	—
			128	58

During the year the Centres at Bristol, Dewsbury, Lindsey and Wolverhampton have been taken over by Local Authorities, and Centres at Carlisle and in the Isle of Wight have been opened.

New Centres conducted by Voluntary Associations have been opened at Harrow, Workington, Bromley, Norris Green, Manchester, Hinckley, Mortlake and Kingston-upon-Thames. Four Centres were closed at Manchester and three in Surrey owing to amalgamation and reorganization.

New Clubs have been opened at Dudley, Brighton and Stafford and one at Southampton has been closed.

Forty-seven Occupation Centres and 8 Industrial Centres are whole time, i.e., are open for 10 or 11 sessions weekly.

Valuable help is still given by voluntary helpers in many centres and some of the Clubs are managed by Toc H.



Home training, the value of which has been emphasized in reference to supervision, is being carried out systematically in several rural areas, notably in Middlesex and in Suffolk.

The numbers of cases on the registers of all centres on 1st January, 1934, was 3,563 as compared with 3,494 last year. This number is classified as follows :—

Under Statutory Supervision...	...	...	...	...	2,586
Under Voluntary Supervision	...	...	...	...	451
Under Guardianship	...	...	...	...	458
On Licence	...	...	...	...	68

In the Report of the Wood Committee it was estimated as the result of careful examination of the mentally defective population in several areas, that an urban population of 43,000 would be necessary in order to establish an Occupation Centre for ten children under 16. This figure was based on the number of imbecile children who would not be likely to need institutional care but who would be fit to attend a Centre. In practice it has been found possible to open centres in urban areas with a population considerably below the estimated figure of 43,000, partly because defectives in attendance at Centres are not as a rule limited to children below the age of 16 and also because some are brought in to the urban area from the surrounding country. It is also probably true that in most areas there are still children attending Centres who would be in an institution if vacancies were available.

The following figures may be of interest to Authorities who are contemplating the opening of a Centre :—

In a number of towns with a population from 12,000 to 40,000 Occupation Centres with over 10 names on the register are functioning. In the larger towns a remarkable variation is shown in the numbers attending Centres. The following are instances grouped in accordance with population. It should be noted that the figures given refer to Industrial Centres as well as Occupation Centres :—

				Population.	No. on Register.
Stratford-on-Avon	...	...	...	11,750	13
Trowbridge	...	...	...	12,030	13
Worcester	...	...	...	52,120	12
Dudley	...	...	...	59,740	47
Bath	...	...	...	69,060	17
Darlington	...	...	...	72,800	49
Ipswich	...	...	...	88,700	50
Newport	...	...	...	89,630	23
Norwich	...	...	...	126,600	11
Wolverhampton	...	...	...	133,300	36
Leicester	...	...	...	240,000	27
Nottingham	...	...	...	270,700	82
Bristol	...	...	...	403,900	97
Leeds	...	...	...	484,900	358
Sheffield	...	...	...	513,000	25
Birmingham	...	...	...	1,009,300	66



The following case histories illustrate the value of attendance at day centres or of home training in cases in which institutional care may not be immediately necessary.

Q. is a Mongol aged 12 who was a great trouble at home ; she ran away and was an actual danger to the other children. She was so difficult at first at the Occupation Centre and so spiteful that she was excluded and institutional care was considered. It was decided to give her a further trial and she has now become thoroughly interested and good at the Centre and at home she is said to be a reformed character. She never runs away now and is happy and gives no trouble. If there had not been an Occupation Centre available this child would certainly have needed institutional care.

N. is a man of 23 under statutory supervision. He was a great anxiety to his mother on account of his chronic wandering habits. He attacked her when she hid his clothes ; neighbours intervened, the lad escaped and was later found by the police and sent to the Observation Ward of the Public Assistance Institution. His mother was much distressed fearing that he would be sent to the Mental Hospital. The Voluntary Association knew the case well and made representations that he should be allowed home under guardianship on the condition that he attended the Industrial Centre. He now attends the Centre regularly and is much interested in his work and sells some of the stools he makes privately. He went with the other lads to the summer camp which the supervisor and home visitors find an invaluable method of getting into closer personal touch. He never wanders now from home, is cleaner in his person and in his habits and helps his mother in the house, which he never did before.

M. is a man of 24 living under the guardianship of his sister. He was sulky and anti-social in his behaviour and showed no interest in his work when he first came to the Industrial Centre. He was attracted by colour and by degrees became interested in various forms of handwork but specially in painting. He now does work of a really high standard. His temper and sulkiness have disappeared and he has developed in every way. He attended the summer camp during which time he became more sociable and took his place amongst the other lads. Without the interest and occupation of the Centre this lad would have been difficult to manage as he was so shut in to himself and anti-social in his attitude. In addition to woodwork, metal work, chair caning and other forms of manual work these lads help with the preparation of meals, scrubbing floors, whitewashing passages, etc. Pocket money at the rate of 3d. weekly is given and the lads share the profit of 25 per cent. on the sale of articles made.

F. is an unbalanced girl of 24 living in a good home. Her father, aged 65, is deaf and her mother almost totally blind. When the case came to the notice of the Association the mother complained that F. was making the home life unbearable and begged that she might be helped to get her into an Institution. The girl was restless and given to fits of depression, when she would sit and moan and cry for hours at a time. When visited she would wring her hands and declare that there was nothing she could do. Gradually she has been encouraged to do a little knitting every day and she has now become intensely interested in her work and is very much less restless and sullen. The parents state that she is better tempered and will do her best to help them and keep the house clean. She no longer complains of headaches and sleeps the whole night through. They state that she has been happy and easy to manage since she has had the interest of some definite occupation and as long as this continues they hope that she will not have to go to the Institution.



## 6. DISCHARGES AND DEATHS.

*Discharges.*—The total number of patients discharged from Orders under the Mental Deficiency Acts 1913-27 during the year 1933 was 309. Of this number, 136 patients had to be discharged owing to the Special Reports and Certificate required by Section 11 of the Act being in such a form that the Board could not properly continue the Order, or owing to the non-receipt of the necessary documents.

Of the 309 patients discharged, 248 were discharged from Certified Institutions, 51 from Guardianship, and 10 from the State Institution. The Board propose at a later date to ask Local Authorities to furnish them with reports on the progress of certain patients who have been discharged, in order that the results of the policy adopted respecting discharge may be reviewed.

*Deaths.*—The number of deaths which occurred during 1933 among mentally defective patients in Institutions (excluding public assistance institutions approved under Section 37) and under Guardianship totalled 343, being 1.2 per cent. of the average number of patients resident. Of these deaths, 284 occurred in Certified Institutions, 10 in the State Institution, 5 in Certified Houses, 6 in Approved Homes, and 38 among patients under Guardianship.

## 7. GENERAL SUBJECTS.

(a) *Nursing in Mental Deficiency Institutions.*

In nearly all the larger institutions many nurses hold certificates from the Royal Medico-Psychological Association, obtained by examination. Others may be State Registered Nurses of Mental Defectives. According to a recent statement\* the total number of nurses who hold the latter qualification is 384. The great majority so qualified were put upon the Supplementary Register on application, as being already experienced in mental deficiency nursing, at the time when the Act came into force, the number who have since qualified by examination being no more than 8.

Of 21 large institutions, the recent particulars of which are in our hands, the percentage of fully qualified or registered nurses varies from so small a number as 2 to 69. The average is about 30 per cent. and this is certainly not too high.

In a large colony or institution the work of the nurse varies from bed-side care of low-grade cripples and helpless patients to the interesting and difficult problem of managing and training the high-grade and high-spirited. It includes the teaching of many forms of handwork and of physical training and games, and there is scope for the exercise of many kinds of skill.

General training is needed to enable the proper care of the sick to be carried out. The number of nurses with double qualifications or with training in general nursing only, varies in the large institutions but there is usually someone recognized in

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\**Nursing Times*, 3rd February, 1934.



one or other of these ways to nurse the sick, supervise their care, and to deal properly with minor injuries and ailments. In some institutions the standard of nursing and of teaching in this respect is high.

The question of the qualifications of nurses in smaller institutions and in approved homes is one which has given rise to a good deal of anxious thought. While it cannot be said that the trained nurse is always and inevitably better than the woman who has not had this formal training but has had experience with mentally defective children and has taken pains to learn, yet it is true that to undertake the care of defectives on the strength of a small experience and a fund of self-confidence is a dangerous experiment. Low-grade children, cripples, mongols and others liable to illness, do need skilled nursing on the physical side, and the difference between patients of this type who are in experienced and conscientious care and those in more or less amateur hands has only to be seen to be appreciated. The difference is evident not only in the patients themselves but in the whole atmosphere of the institutions and in the standards and stability of the staff.

On the other hand, a knowledge of general nursing alone is not enough. The manual training of low and medium grade patients is a very skilled business. Without knowledge of and experience in the use of good methods of sense training, hand-work, etc., the nurse can achieve very little for her charges, whereas sound methods patiently applied over months or years can produce surprising results.

Here and there homes exist in which care is kindly, interested and in many respects satisfactory, but in which there is also a lack of orderliness and method and of the higher ranks of cleanliness, a state of affairs which the discipline of a good nurse trained in institution or hospital could put right, to the benefit of everybody concerned.

We hope to carry further our enquiries into nursing facilities in institutions for the mentally defective.

#### *(b) Mental Defectives in Mental Hospitals.*

In our Report for 1931 a preliminary account was given of a census taken in two mental hospitals showing that 11 per cent. of the patients were found to be mental defectives and fit for transfer to Certified Institutions. It was pointed out that Local Authorities might find the transfer of these patients to Mental Deficiency Colonies or to adapted Public Assistance Institutions an economical method of remedying or relieving over-crowding in mental hospitals and, in some areas, of limiting the extensions that are being found necessary to such desirable additions as convalescent villas and admission units.

In the course of the past two years this investigation has been continued in eleven mental hospitals situated in Kent, Stafford-



shire, East Anglia and Glamorgan, and our sincere thanks are due to the Committees and to the Medical Superintendents of the following Hospitals for their co-operation and help :—

Barming Heath, Chartham, Cheddleton, Stafford, Burntwood, Suffolk, Fulbourn, Ipswich, Bridgend, Cardiff, Swansea.

Patients to the number of 2,007, or 17 per cent. of the total number in these hospitals, selected by the Medical Superintendents as being *prima facie* mentally defective, were examined individually by two medical Commissioners. Amongst those examined 1,692, or 14 per cent., of the total number of patients, were found to be mentally defective: the discrepancy between these two figures is to be accounted for almost entirely by the fact that in order to preserve the uniformity of standard necessary in an investigation of this kind it was desirable that the Commissioners should be able to satisfy themselves as to the existence of mental defect, and that they found it necessary to exclude from their calculation a considerable number of patients in whom the Superintendent's diagnosis was probably accurate but who were now so demented, inaccessible or difficult that the existence of defect could not be made obvious to the investigators; 1,456, or 12·2 per cent. were found to be fit for transfer to institutions for defectives. It is pointed out in the report made by the Commissioners that these figures tend to be an under-estimate.

This indication that at least 12 per cent. of the patients are suitable for transfer to Mental Deficiency Institutions has an important bearing on the provision of accommodation throughout the country as a whole—having regard to the relative cost of beds in the different types of institution and the different measures appropriate to the treatment of the mentally defective and the mentally disordered.

The significance of the administrative and economic questions involved will no doubt attract the attention of Local Authorities and it may assist them to have further particulars.

After a patient had been examined and found to be mentally defective the Commissioners considered for which of the following types of institution he would be suitable :—

- (1) Mental Deficiency Colony or Certified Institution ;
- (2) Public Assistance Institution (Section 37) ;
- (3) Mental Hospital.

The distinction between a Colony and a Public Assistance Institution was made in order to show for what types and numbers of patients the facilities usually available in adapted Public Assistance Institutions would suffice. The use of Public Assistance Institutions was suggested as a measure of economy and assumes the existence of separate institutions, or parts of institutions, which will be competently staffed and given up for the use of defectives. In areas where such conditions do not exist, accommodation for patients classified as suitable for a Public Assistance Institution must be provided in the Colony.



In re-allocating patients to the different types of institutions the following principles were adopted.

Where a psychotic condition predominated they were allocated to the mental hospital, and where the psychotic features were non-existent, slight or in abeyance, to the colony or Public Assistance Institution. All cot and chair and tubercular patients, suitable for transfer from the mental hospital, were allocated to the colony on the grounds that they require nursing care which is more easily provided at the colony than elsewhere. Patients under the age of 30 were, as a rule, allocated to the colony where they can benefit from the training facilities provided, whereas those over the age of 40 need only simpler surroundings and were allocated to Public Assistance Institutions. Between the age of 30 and 40 the more active and capable patients were allocated to the Colony and the less active to the Public Assistance Institutions.

The result of this reallocation is given in the table opposite, in which the patients are also classified according to age, sex and employability.

Various points of administrative importance emerge from these figures.

*Numbers.*—In the first place, if the situation in these eleven hospitals is an indication of the position in mental hospitals generally, it would follow that the number of defectives at present in all mental hospitals amounts to about 21,000 and that 86 per cent. of these, or 14,960, are fit for treatment in institutions for mental defectives. The actual re-allocation would be as follows :—

To Colonies and Certified Institutions	7,112	} 14,960	=41 per cent.
To Public Assistance Institutions			
Section 37 ... ..	7,848		=45 per cent.
To remain in Mental Hospital	6,140		=14 per cent.

*Mental Grade.*—As regards the mental grade of the defectives examined it was found that 56 per cent. were feeble-minded and 44 per cent. idiots or imbeciles. Thirty-five per cent. of the whole group were found to be so feeble mentally or physically, as to be unemployable and in no less than 40 per cent. there were complicating conditions, such as epilepsy, paralysis, deaf mutism or blindness, necessitating special forms of care and training.

The number and mental grade of defectives in all mental hospitals in England and Wales estimated, from the data of this inquiry, to be fit to transfer to mental deficiency institutions is as follows :—

—	Feeble-minded.	Imbecile.	Idiot.	Total.
To Colony... ..	2,987	2,347	1,778	7,112
To Public Assistance Institutions ... ..	4,788	3,060	—	7,848
				14,960



*Institution, Employability, Age and Sex Classification: Total Numbers for four Areas.*

Age Group.	Colony.		Public Assistance Institution.		Mental Hospital.		Totals.	
	Employ-able.	Unemploy-able.	Employ-able.	Unemploy-able.	Employ-able.	Unemploy-able.	Employ-able.	Unemploy-able.
-30     ...     M. F.	157 119	122 97	— —	1 —	14 20	21 16	171 } 310 139 }	144 } 257 113 }
30-40     ...     M. F.	74 52	16 21	67 52	26 26	10 26	25 26	151 } 281 130 }	67 } 140 73 }
40+     ...     M. F.	7 3	10 13	236 223	57 77	13 23	20 22	256 } 505 249 }	87 } 199 112 }
Total     ...     M. F.	238 174	148 131	303 275	84 103	37 69	66 64	578 518	298 298
	412	279	578	187	106	130	1,096	596
							1,692	

All the cases needing nursing care are allocated to the Colony and an influx from the mental hospitals of 1,400 helpless cases would mean the provision in Colonies of additional pavilions suited to their needs.

*Sex.*—The number of males in the whole group of 1,692 found to be defective was higher than females (876 males, 816 females), whereas in mental hospitals generally females preponderate. The excess of males over females occurs in the lower grade patients and specially in younger age groups. Other investigations have shown a general preponderance of males over females amongst low grade defectives and it has also been found that mentally defective boys are sent to Institutions at an earlier age than girls.

*Age.*—It is difficult to make deductions as to the length of life of defectives in general from the information obtained about defectives in mental hospitals. But the high mortality at an early age of the low grade groups is apparent. 70 per cent. of the idiots examined were under 30 as compared with 50 per cent. in the general population. On the other hand 48 per cent. of the feeble-minded group, as compared with 35 per cent. in the general population were over the age of 40.

*Employability.*—As regards the patients' employability or trainability, which terms for purposes of the present classification were taken to be identical and have been interpreted to include any capability for training and employment however simple, one interesting fact which emerges is the high proportion, 72 per cent., of the patients over 40 years of age who are regarded as employable. Patients between the ages of 40 and 60 were on several occasions described as the most reliable workers in the hospital and the figures given dispose of the objection often urged to the segregation of the older defectives in public assistance institutions that there would not be a sufficient proportion of workers to do the ordinary work of the institution.

*Transfer.*—The importance of encouraging the interchange of patients between mental hospitals and mental deficiency institutions became apparent in the course of the investigation. It is clear that many defectives of all grades become negativistic, irrational, depressed, excited or confused to an extent that makes them unfit for the life and treatment in a mental deficiency colony. When this occurs the transfer of a patient to the mental hospital is usually a matter of urgency and is effected without delay. But when these symptoms clear up, as they often do after a period in the mental hospital, and the patient quietens down, there is a danger of re-transfer to the colony being overlooked. From every point of view we think it is important that transfer and re-transfer should be effected easily and as the changing condition and needs of the patient demand. It is easy to see how harmful it may be to other patients in mental hospitals to be treated side by side with imbeciles and idiots, and it is only natural to surmise that



the retention of these cases may deter voluntary patients from entering the hospital in the early stages of mental disorder. It is also clear that the needs of the mentally defective patient are not constant ; at one time treatment in a mental hospital may become urgent, but when the psychotic symptoms subside he will again require training and treatment amongst his fellow defectives and a re-transfer to the colony is in the interest of the individual as well as of the mental hospital.

The whole investigation shows fully the desirability of removing mental defectives from mental hospitals to mental deficiency institutions in the interests of proper treatment, administration and economy. Colony beds are in general provided at a lower cost than mental hospital beds. Whilst the removal of some 15,000 defectives from mental hospitals would not in effect produce that number of vacancies it would at least relieve overcrowding and go far to meet the yearly increase in demand for beds for many years to come. We hope that mental deficiency committees and mental hospital committees will give this matter their active attention and act in close collaboration in investigating the position when planning extensions or drawing up building programmes.

(c) *Mental Defect and Crime.*

In our Annual Reports for the years 1931 and 1932 we gave particulars of mental defectives dealt with during those years consequent upon their having been found guilty of some criminal act. We are now able to review the figures over the triennial period 1931-1933.

TABLE I.

*Number of persons found guilty of criminal offences, dealt with as mentally defective, classified in age groups.*

Age-group.	1931.	1932.	1933.	Total.	Per cent.
Under 14 ... ..	11	12	17	40	4·5
Age 14 and under 16 ...	31	31	24	86	9·5
Age 16 and under 21	139	153	134	426	47·5
Aged 21 and under 30	83	77	65	225	25·0
Aged 30 and over ...	42	40	38	120	13·5
	306	313	278	897	100·0

It is interesting to compare the figures as regards the mental defectives who have been found guilty of criminal offences with information concerning indictable offences committed in the general population.

TABLE II.

*Number of persons found guilty of indictable offences, classified in age groups.*

Age-group.	1929.	1930.	1931.	Total.	Per cent.
Under 14      ...      ...	6,380	6,863	7,587	20,830	12·2
Aged 14 and under 16	4,771	5,132	4,969	14,872	8·6
Aged 16 and under 21	10,455	11,929	12,417	34,801	21·1
Aged 21 and under 30	13,529	13,989	14,761	42,279	24·8
Aged 30 and over      ...	18,187	18,853	19,633	56,673	33·3
	53,322	56,766	59,367	169,455	100·0

In Table II regard is had only to the commission of indictable offences, for the reason that the annual number of non-indictable offences amounts to more than half a million. A large proportion of these non-indictable offences, including a very large number of traffic offences, are offences which have no bearing on the problem of crime.

In the course of the last three years the total number of offenders who have been found to be certifiable as mentally defective is only 897. Of these 897, 169 (or 19 per cent.) have been guilty of non-indictable offences, and the remainder have been guilty of indictable offences. In the last triennial period for which figures are available, the total number of persons found guilty of indictable offences was nearly 170,000, and the total number of persons found guilty of non-indictable offences was 1½ million. The offenders who are certifiable as mentally defective form, therefore, an insignificant proportion of the total number of offenders. A very large proportion of the persons dealt with in the Courts for criminal offences of all kinds are merely fined or bound over, and there is a possibility that a certain number of these persons who have been fined or bound over were mentally defective, but their mental defect was not known to the Courts. There are also other cases in which the mental defect is not recognizable when they first come before the Courts. Even when allowance has been made for these cases, the proportion of mentally defective offenders to the total number of offenders remains very small.

Comparison between Tables I and II shows that, whereas of the total number of persons convicted of indictable offences 41·9 per cent. were under 21 years of age, the proportion of mentally defective offenders under the age of 21 was 61·5 per cent. One cause of this difference is that mentally defective children are unable to meet essential social requirements and consequently incline to erratic and foolish behaviour. Offences by them are more easily detected and the fact that such defectives are unlikely to have opportunities for repeating criminal offences affects the figures in the older age groups.



As regards the sex distribution, 84 per cent. were males and 16 per cent. were females. This figure is approximate to that in regard to offences committed in the normal population.

TABLE III.

*Number of mental defectives dealt with as criminals in each year, compared with total number dealt with under Mental Deficiency Acts in that year.*

—	Number dealt with.	Number of criminals.	Percentage of criminals to total number dealt with.
1931 ...	2,883	306	10·6
1932 ...	2,886	313	10·8
1933 ...	2,782	278	9·9
	8,551	897	10·5

It will be seen that approximately 10 per cent. of defectives are dealt with in each year for the commission of offences. Of the 31,493 mental defectives who were in institutions in pursuance of Orders under the Mental Deficiency Acts on the 1st January, 1934, 3,503 (or 11·2 per cent.) were delinquents.

In the year 1931, 18·6 per cent. of the cases had previously been ascertained; in 1932, 23·0 per cent., and in 1933, 34·5 per cent.

TABLE IV.

*Type of Institution or care to which criminal defectives sent, expressed in percentage of the total.*

—	State Institution.	Certified Institutions.	Public Assistance Institutions.	Guardianship.
1931 ...	6·9	63·8	27·0	2·3
1932 ...	3·8	71·9	20·8	3·5
1933 ...	4·7	80·6	12·2	2·5

Table IV is evidence of the gradual rise in the use of Certified Institutions for criminal defectives and the decrease in the use of Public Assistance Institutions for difficult cases. There can be no doubt that it is unwise to send a defective who has already demonstrated anti-social tendencies to a Public Assistance Institution, unless it be one which is particularly well equipped for the reception of defectives. The increase in the number sent to Certified Institutions is in the main—if not wholly—due to the provision by Local Authorities of their own institutions. Few

contract institutions wish to take the criminal defective, no matter how trifling the offence.

TABLE V.

*Percentage of cases dealt with (a) by Courts under Section 8(1)(a) or (b); (b) by the Secretary of State under Section 9.*

	(a)	(b)
1931 ... ..	85	15
1932 ... ..	89	11
1933 ... ..	91	9

The increased use by Courts of their powers under Section 8(1)(a) or (b) of the Act is a step in the right direction. In the year 1933 only 9 per cent. of the cases have been dealt with by way of imprisonment and Section 9.

TABLE VI.

*Distribution of Offences committed by mental defectives in the years 1931, 1932 and 1933.*

Offence.	1931.	1932.	1933.	Total.	Per cent. of total.
Murder and Infanticide	1	—	1	2	·2
Attempted murder or wounding ... ..	3	3	1	7	·8
Arson ... ..	6	2	3	11	1·2
Rape, Incest, indecent assaults and exposure	74	69	67	210	23·4
Robbery or Assault ...	9	15	10	34	3·8
House breaking and burglary ... ..	19	20	10	49	5·5
Larceny ... ..	99	133	108	340	37·9
Bicycle stealing ...	16	14	19	49	5·5
Attempted suicide ...	5	2	4	11	1·2
Loitering ... ..	19	10	14	43	4·8
Prostitution (soliciting)	2	—	3	5	·6
Cruelty and neglect of children ... ..	3	3	6	12	1·3
Cruelty to animals ...	1	—	1	2	·2
Sleeping out (without visible means of support), Vagrancy and Begging ... ..	28	26	18	72	8·0
Bigamy ... ..	—	1	—	1	·1
Miscellaneous offences	21	15	13	49	5·4
Totals ... ..	306	313	278	897	99·9



TABLE VII.

*Distribution of Offences as between normal and mentally defective delinquents.*

Type of Offence.	Number and percentages in the case of the Normal.		Number and percentages in the case of the Mentally Defective.	
1. <i>Offences against the person.</i> Murder, Assault, Bigamy, and sexual offences	8,287	4.4	232	31.9
			Murder	2
			„ attempted	7
			Bigamy	1
			Sexual	210
			Cruelty to children	12
2. <i>Offences against Property with Violence.</i> Robbery Shop and House breaking	14,490	9.3	83	11.4
			Robbery	34
			Shop and house breaking	49
3. <i>Offences against Property without Violence.</i> Larceny	142,407	83.8	389	53.4
			Larceny	340
			Bicycle stealing	49
4. <i>Miscellaneous Offences.</i> Arson, attempted suicide, etc.	4,271	2.5	24	3.3
			Arson	11
			Attempted suicide	11
			Cruelty to animals	2
Totals	169,455		728	

In Table VI we give the nature and number of the offences committed in each year, and in Table VII we endeavour to compare these data with information concerning the same class of offences committed by normal individuals. It has been necessary—in order that the figures might be comparable—to exclude from the mental defective total (897) all those cases of offences which are clearly non-indictable. Therefore, for the purpose of Table VII the total number of mentally defective criminals has been reckoned at 728, and not the actual total of 897 dealt

with for all types of offences for the triennial period under review. The division of the offences into the four classes, as in Table VII, is that contained in the Criminal Statistics.

The outstanding feature is that amongst those mental defectives who have been found guilty of offences, the percentage guilty of offences against the person is high. Of the 728 mental defectives who were guilty of indictable offences, 31·9 per cent. were guilty of offences against the person, whereas of the total number of persons guilty of indictable offences, namely 169,455, only 4·4 per cent. were guilty of offences of this class. The offences against the person committed by mental defectives were mainly sexual offences. Out of the total of 728 mental defectives guilty of indictable offences, 210 were guilty of sexual offences.

In a previous report on this subject attention was drawn to the large number of sexual offences, some of them of a grave character, committed by mental defectives, and the figures now produced support the view that the mental defective is a more dangerous person by reason of his inability to control sexual impulse than is the supposedly normal delinquent. But it must be borne in mind that the persons who are certified as mentally defective form only about 4 per cent. of the total number of persons who are found guilty of sexual offences. It may be that normal individuals who commit sexual offences do not get found out, or manage to secure that the case is not brought to the notice of the police. Mental defectives commit offences in such a manner that detection is fairly easy. The figures point to the need for the early ascertainment of mental defectives and for prompt action in the case of those who show erotic or anti-social tendencies.

### *Conclusion.*

1. We have now been able to study for a period of three years the figures in respect of mental defectives who have committed crime and have contrasted them with comparable figures in respect of normal individuals who commit crime.

2. The number of mental defectives who commit criminal offences is so small that no special problem is involved. A large proportion of the crimes committed are, however, of a sexual character and serious in their results on society. There is evidence that there is a decline—slight though it may be—in the commission of criminal acts by defectives.

3. It has been shown that Local Authorities are to some extent carrying out more efficiently their duties of ascertainment, though, in the year 1933, 65·5 per cent. of the cases coming before the Courts were still not previously known to them; and it required some very definite anti-social act before the defective was sent to an institution, or placed under guardianship. We can appropriately quote the report of the Departmental Committee



on Sterilization, concerning that method of dealing with the difficulty :—

“ . . . if there is one conviction which has stamped itself on our minds as beyond any possible doubt it is the disastrous social consequences of ignoring defect.”

The disastrous social consequences of ignoring defect is clearly told in the preceding Tables, and especially in Table VI as far as that is concerned with sexual offences.

## 8. STATE INSTITUTION.\*

### (1) Rampton.

We have received the following report from Dr. Schneider, the Medical Superintendent of the State Institution at Rampton.

The new admissions to Rampton during the year 1933 were 51 male and 52 female patients of whom 7 were under the age of 16. The net increase during the year of patients in the State Institution amounted to 43, but the closing down of the Warwick branch in May, 1933, and the opening of Moss Side in October has resulted in a decrease of 14 patients in residence at Rampton at the end of the year.

—	Men	Women	Boys	Girls	Total
Numbers resident on 1st January, 1933 . . . . .	645	416	36	28	1,125
<i>Add :—</i>					
Admissions . . . . .	44	43	7	9	103
Transfers from Warwick . . . . .	—	45	—	—	45
Transfers from Moss Side . . . . .	3	2	—	—	5
Readmissions . . . . .	5	5	—	2	12
Recaptures . . . . .	11	1	2	—	14
From Children's Section . . . . .	6	4	—	—	10
From Adults' Section . . . . .	—	—	1	—	1
	714	516	46	39	1,315
<i>Deduct :—</i>					
Licences . . . . .	7	24	—	1	32
Escapes . . . . .	14	1	2	—	17
Discharges . . . . .	10	13	3	1	27
Transfers to Moss Side . . . . .	53	53	—	1	107
To Adults' Section . . . . .	—	—	6	4	10
To Children's Section . . . . .	1	—	—	—	1
Deaths . . . . .	3	6	—	1	10
	88	97	11	8	204
Numbers resident on 31st December, 1933 . . . . .	626	419	35	31	1,111

In addition, there were 18 patients on the books but not resident on the 31st December.

\* An institution for defectives of dangerous or violent propensities established and maintained by the Board of Control under the provisions of section 35.

The following table shows the type of Institution or place from which these patients were received.

						Males.	Females.
Certified Institutions	...	...	...	...	...	22	32
Institutions under Section 37	...	...	...	...	...	13	16
Prisons	...	...	...	...	...	4	1
Courts of Sum. Jur. :—Section 8	...	...	...	...	...	5	—
Borstal	...	...	...	...	...	1	—
Mental Hospitals	...	...	...	...	...	1	2
Own Home	...	...	...	...	...	1	—
Places of Safety	...	...	...	...	...	3	1
Industrial School	...	...	...	...	...	1	—
Total Admissions						51	52

*Admissions.*—As in previous years, the majority of patients were admitted from Certified Institutions and Institutions under Section 37.

The mental classification of the patients newly admitted during 1933 was as follows: feeble-minded, 79; imbecile and idiot, 20; moral defectives, 4.

The marked decrease in the numbers admitted immediately following certification (16 males and 4 females) is gratifying. There were 30 males and 12 females so admitted in 1932; and in 1930 62 males and 12 females. The decrease may be due to one or all of several factors:—

1. Increased accommodation in Certified Institutions;
2. Improved facilities for control;
3. Better ascertainment (before violent and dangerous propensities are manifested);
4. Recognition by the Courts of deficiency in delinquents.

*Licence.*—There were on the 31st December, 1933, 6 males and 10 females on licence.

*Section 16.*—No patient was certified under the Lunacy Acts, but 4 males and 3 females in Mental Hospitals remain on the books.

*Absconders.*—The escapes this year show the lowest figure for some years; 16 males and 1 female absconded. The figures vary considerably and quite irregularly from year to year, and there seems to be no constant cause.

*Deaths.*—Ten patients died this year. The causes of death were Tuberculosis 3, Pneumonia 1, Epilepsy 1, Heart Disease 2, other diseases 3. The death rate was 8·6 per thousand resident.

*General Health.*—The health and condition of the patients throughout the year have been very satisfactory.

There have been no epidemics, and no spread of infectious disease, although we have had several mild cases of influenza, and one of scarlet fever. Unrestricted use of the wide verandahs in the Infirmary Wards has contributed largely to the successful prevention of epidemics, as also to the curtailment of individual illness. I am persuaded that we avoid much mental disturbance also in our semi-psychotic patients by putting them to bed on these verandahs as soon as they show signs of physical deterioration or exhaustion—so often the fore-runner of a mental breakdown.

The Consultants in General Medicine, Eyes and Ears, Nose and Throat, respectively, have visited regularly, and their advice and treatment have been much appreciated both by the patients and the Staff.

The Visiting Dentist has done much good work for the patients.

*Occupation.*—The male workshops are so well established that there is little to say of them except to note that they continue to run well. Most of the instructors lecture to the patients under their care once a week on the theory of their particular craft, and it is most gratifying to observe the interest quickened in the boys' minds by the presentation of their daily work in a new light.



The room in the Hawthorn Villa provided as a workshop is used for post-encephalitic boys, who, although their general intelligence is high, are difficult to employ on account of the retardation of mind and muscle caused by their disease. The shop has been a great success, and there are now seventeen boys working contentedly in it who formerly presented the very picture of uncontrolled conduct and moral depravity. In this shop apparatus is made for use in the low grade classes and useful work is done in the manufacture of wooden labels and seed boxes, paper bags, wool rugs, fretwork, etc.

I cannot leave the subject of the male workshops without mentioning one example of the utility of the Metal Workers. They had on their hands a large number of condemned iron bedsteads; these they are now making into excellent wheelbarrows, for which there is a large demand in the gardens and on the farm.

Concrete Work was started this year as a regular industry. Paving stones, curbs, bricks and seat ends are being made in the concrete shed.

In the female workshops also varied work of a high technical standard is well established.

Low-grade women's class goes on from strength to strength; it has been possible to promote several of these very low-grade patients to the Raffia Room and the Rug Room. When it is borne in mind that these women a year ago were unable to perform the simplest tasks with their fingers, this result is very creditable.

The newly-appointed Games Mistress has done much good work with the female patients, comparable with what has long been done for the men. She now has full charge of such games as hockey and net ball, and in addition takes classes in gymnastics, drill and marching to music.

The School underwent a severe test of its organization and stability when both the teachers retired at the end of November. The work has been ably carried on by the Nursing Staff pending the appointment of new Teachers. The Chaplain's assistance in taking certain lessons has been invaluable.

A football league for patients was inaugurated in 1933. Six teams competed, and the competition is not yet decided.

The Scouts are justly proud of winning the Signalling Shield for Northern Division. The Troop were delighted to meet and entertain a football team from the Coleshill Hall Scouts on 18th October, 1933.

The Guides have increased their numbers to 18. They won a First Class Diploma for Country Dancing at Mansfield this year.

The installation of the "talkies" at the beginning of the year was a great boon. It had become next to impossible to obtain good silent films, and the change to "talkies" was a delight to the patients.

The visit of the Minister of Health on 25th May, 1933, was a great source of pleasure and inspiration to the Staff. The interest and sympathy shown by the Minister was greatly appreciated by everyone.

The Lincolnshire Diocesan Deaf and Dumb Association are now paying monthly visits, and holding services for our half-a-dozen deaf-mutes.

Arrangements were made this year with the National Library for the Blind to lend Braille books for the use of our blind patients.

*Staff.*—The move to Moss Side occasioned many changes in the personnel of the Staff.

The Royal Medico-Psychological Association's certificate in Nursing the Mentally Deficient was obtained by eight nurses and eight attendants. Eight nurses and fifteen attendants passed the Preliminary Examination. It was decided that every member of the staff should go in for the St. John's Ambulance Examination six months after joining. This year 18 nurses and 11 attendants have passed the examination.

Games have been keenly played. The football team unfortunately failed to retain the Civil Service Cup, but they are to be congratulated on reaching the Final. The Cricket team were third in the 2nd Division



of the Bassetlaw League. Hockey, Tennis and Swimming have also provided much healthy recreation. Dances and Whist Drives have been well attended.

I wish once more to thank the Staff for their unfailing support, both in their care of the patients and their loyalty to me.

### (2) *Moss Side Branch.*

In 1933, the Board resumed possession of the Moss Side Institution, Maghull, near Liverpool, which had been lent to the Ministry of Pensions. It was opened as a branch of the State Institution in October, when 50 male patients and 51 female patients were transferred from Rampton. The total accommodation is 306 beds: males 150; females 156. The numbers in residence on January 1st, 1934, were 50 males and 52 females. Dr. C. H. G. Gostwyck (M.B.Edin., F.R.C.P.E., D.P.M.), formerly Deputy Medical Superintendent at Rampton has been appointed Medical Superintendent at Moss Side.

## 9. CENTRAL ASSOCIATION FOR MENTAL WELFARE.

The objects of the Central Association for Mental Welfare as regards work for the mentally defective are set out as follows:—

- (i) To form a Central Committee representative of administrative, educational and social bodies directly or indirectly concerned with the care of defectives, and to arouse interest in the problem of mental deficiency.
- (ii) To make provision for and assist in the training of teachers, visitors, social workers and others interested in the care of defectives.
- (iii) To form Local Associations, in the different local government areas, for the home care of defectives.
- (iv) To assist and advise in individual cases of defect in areas where there are no Local Associations.

The work that has been carried out under all these headings since the Association was founded in 1913 has been of the greatest value both in assisting Local Authorities, as contemplated in the Mental Deficiency Act, and in raising the standard of knowledge and efficiency in many branches of mental health work.

There are in existence 51 Voluntary Associations affiliated to the Central Association and working in co-operation with the Local Authority for the welfare of defectives living in the community. During the past year the organizer employed by the Association to develop the work in new areas undertook an investigation in Nottinghamshire at the request of the Local Authority, which has led to the appointment of a trained mental health worker by the Council. In the same way the organizer has made a survey of the conditions in Northamptonshire and in Oxfordshire.

The Association also makes itself directly responsible for certain forms of community care. The organization of day centres and of home training has been undertaken for the County of Middlesex where there are now seven full time centres and a



craft class with 265 defectives in attendance whilst 126 others are being taught in their own homes. The Guardianship department of the Association has increased its activities and on 1st January, 1924, there were 180 cases under care, of whom 50 per cent. were entirely or partly self-supporting.

The Association has this year again leased a house by the sea for use as a Holiday Home for defectives.

As regards training, short courses have been organized during the year for Medical Officers, for Teachers, for Nurses in Institutions, for Supervisors of Occupation Centres and for officers of local Authorities and of Voluntary Associations. A travelling occupational organizer is also employed whose services can be engaged for the development of the teaching departments and the instruction of the Nurses in Institutions and Homes. A specialist in speech training is employed in the same way, chiefly amongst higher grade children in schools. One result of attendance at these courses is seen in the more enlightened and systematic methods of training that are being introduced into institutions, schools and centres with obvious benefit to the patients, and we have no hesitation in urging Local Authorities and the managers of Institutions to make use of the opportunities that are again being offered this year.

### III.—GENERAL.

#### 1. PROSECUTIONS.

The following prosecutions under the Mental Deficiency Act, 1913, resulted in convictions :—

*R. v. Lucy Adeline Follows* :—The defendant was charged before the Stipendiary Magistrate sitting at Burslem on January 24th, 1933, with inducing and knowingly assisting her son, a certified mentally defective patient in Stallington Hall, an institution certified under the said Act, to escape therefrom contrary to the provisions of Section 53 of the said Act.

Upon an undertaking by the defendant that she would not interfere with the patient during his stay at Stallington Hall she was bound over in the sum of £50 with her husband as surety in the like amount and ordered to pay £7 7s. costs.

*R. v. Frank Snedker* :—The defendant pleaded guilty at the Derby assizes on February 27th, 1933, to a charge preferred against him under Section 56 of the Mental Deficiency Act, 1913, of having carnal knowledge of a mentally defective woman and was sentenced to 15 months imprisonment.

*R. v. Thomas Stephen Cornford* :—The defendant pleaded guilty to a charge under Section 56 of the Mental Deficiency Act, 1913, of having carnally known a mentally defective woman and was sentenced at the Lewes assizes on 15th March, 1933, to 6 months imprisonment.

*R. v. Cyril Phillips* :—The defendant was convicted at the Nottingham assizes on 7th August, 1933, under Section 56 of the Mental Deficiency Act, 1913, of having carnal knowledge of a mentally defective woman and sentenced to 6 months imprisonment.

#### 2. ALLEGATIONS OF ILL-TREATMENT.

Two inquiries on oath were held during the year into allegations of ill-treatment of certified patients.

1. A.J.D., a rate-aided certified patient, 47 years of age, was admitted to Cane Hill Mental Hospital on 16th December, 1932, and died therein from broncho-pneumonia on 4th January, 1933. In view of allegations in regard to injuries sustained by the patient, insufficiency of clothing and temperatures of the side and padded rooms made by the widow at the inquest, we decided to hold an inquiry on oath.

The inquiry was held at the mental hospital on the 30th January, 1933, by two Commissioners, and was attended by the widow and daughter of the deceased with a friend of the former, by a representative of the Transport and General Workers' Union, by the Chairman of the Mental Hospital Sub-Committee, the Chief Officer of the London County Council Mental Hospitals Department, and by one of the Solicitors of the London County



Council. Twelve witnesses were examined and the Commissioners came to the following conclusions in regard to the allegations :—

- (1) That the injuries to the ribs and probably the black eye were due to a struggle on the 18th December.
- (2) That there was no cruelty and no undue force used by the two male nurses concerned.
- (3) That the terminal broncho-pneumonia was in no way due to a fall on the 18th December.
- (4) That there was sufficient clothing on the patient and on the bed and that the temperatures of the side and padded rooms were not unduly low.

2. C.E.M., a private certified patient, 29 years of age, was admitted in October, 1928, to St. Andrew's Hospital, Northampton. Complaints having been received regarding the patient's treatment, including serious allegations of ill-usage by male nurses, we decided to hold an inquiry on oath at the hospital.

The inquiry was held on the 29th and 30th November, 1933, by two Commissioners, and twenty-five witnesses were examined. The father and brother of the patient attended the inquiry and were given every opportunity of putting questions to the witnesses. After hearing the evidence and examining the records, the Commissioners came to the conclusion that the allegations had not been substantiated.

### 3. RESEARCH.

Seventy-two communications, including 21 limited to routine laboratory work, have been received from the following sources : 60 of the 99 County and Borough Mental Hospitals, 4 of the 13 Registered Hospitals, and 8 Institutions for mental defectives. Sixteen of these contributing institutions were not in last year's list—a welcome and substantial increase ; but of the 64 institutions upon whose work our last year's supplement was based, five have not sent us any contribution on this occasion.

*Routine Laboratory Work.*—Summaries have been received from almost all of the institutions making returns. In many of them a large amount of clinical laboratory investigations is detailed, reflecting much scientific activity, and offering a considerable contrast to the situation which prevailed, say, fifteen years ago or, indeed, before the war. This is gratifying to note, for, while such work does not claim to rank as research, if it is systematically carried out and duly tabulated and recorded, it may one day serve as such. We therefore hope that each institution at which there is a laboratory will find it possible to forward us a yearly return of this work.

*Chronic Infective Processes (Septic Foci, etc.).*—From Birmingham, Dr. Pickworth reports continued research into the pathology of nasal sinus infections. Many informative specimens have



been prepared, and the sphenoidal bone has been studied in relation to invasion by micro-organism. In 63 autopsies the nasal sinuses were specially examined, one or more sinuses showing evidence of past infection in 37 cases. Dr. Graves reports upon the clinical aspects of the work. The investigation and treatment of septic and other conditions indicating bodily disease have been continued. Reports are submitted concerning the work of the dental and the ear-nose-and-throat departments. From the former, several cases are fully recorded in which recovery supervened, usually after the removal of unerupted, impacted wisdom teeth and carious teeth with septic roots and abscess formation, together with treatment of septic nasal (antral, sphenoidal, ethmoidal) sinuses, or removal of septic tonsils. In certain of these cases colonic irrigation was employed. As to *colonic irrigation*, it would be of interest to learn from those mental hospitals which employ this treatment (records of which appear scanty) what value is attached to it, as well as the particular technique employed, for example, the extent to which the entire length of the colon is reached effectively by this procedure. As sometimes employed, the technique lends itself to criticism in this respect. There is, of course, the practical difficulty to be met (such as occurs, for example, in assessing the value of light therapy) of withholding other methods of treatment in order to prevent their complicating assessment. The report from the ear-nose-and-throat department shows that the work of ascertaining the presence of naso-pharyngeal sepsis (including the use of the Watson-Williams technique for exact ascertainment of sinus-disease) and treatment of the condition has been continued. Out of 384 direct admissions in 1933, evidence of nasal disease was regarded as present in no less than 317 cases, in 258 of which the tonsils also were diseased. The number of diseased sinuses found (in the great majority, more than one) and the anatomical distribution of sinus-disease are set out in tables. Stress is laid, as in the last report, upon the importance of examining the sphenoidal sinuses.

At Cardiff, Dr. McCowan reports the continuation of work upon the subject of infection of the nasal sinuses and tonsils in the psychoses, the results being regarded as confirmatory of his views expressed last year\* (based upon 807 consecutive admissions). Sinusitis was found in 3 per cent., tonsillitis requiring operative treatment in a similar percentage. At this hospital, these infections are considered to be important causative factors in a small minority of psychotics in general; but in toxic exhaustive psychoses to be comparatively common and frequently causal. This subject would appear to have obtained far more attention (in a limited number of hospitals) in this country than in continental countries; if this view is correct, experience and

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\* *Lancet*, 14th October, 1933.



criticism from such countries would be advantageous. From Swansea (Cefn Coed), Dr. Skottowe reports a study of the relative values of spaced (one-at-a-time) and wholesale extraction of infected teeth, where dental toxæmia appears to be a causal factor in the psychosis. It is being sought to determine whether a better response can be induced when the patient is inoculated with his own toxins (a process taken to follow each extraction) than by total extraction at one or two sittings, with vaccine therapy. At St. Andrew's, Northampton (Dr. Rambaut's report), 331 patients, admitted to Wantage House Reception Hospital over a period of six years, had X-ray stereoscopic examinations for possible sinus infections. In only 27 cases was it felt necessary to refer the patient to the rhinologist, who made an exploratory puncture for diagnosis and evacuation in eleven (six antral, three sphenoidal, one antral and sphenoidal, one antral and ethmoidal sinuses). In nine, infection was verified.

Judging from the above communications—four in number—which are all we have received, the subject of focal infection might seem to be receiving a very limited amount of interest. We hope, indeed we believe, that the number of these communications does not reflect the extent of interest which is really taken in the subject. We know, for instance, that visits by members of the medical staffs of a number of mental hospitals have been paid to Birmingham to see and to discuss this work in progress there; and, at visits by Commissioners to mental hospitals, in discussing the treatment of patients in bed, treatments directed to the presence of this or that septic focus are frequently described to us. Whatever be the share of these factors in the production of mental disorders, even should it be considerably less than that claimed for it by some observers, the discovery and removal of such foci must always be a matter of first importance. Hence our wish for an increase in the number of contributions relating experience and affording wider criticism in connection with the treatment of cases having specially in mind these factors as their cause.

*Tuberculin Tests : Tuberculosis.*—In the communication from Cardiff is a report from Professor S. Lyle Cummins, C.B., C.M.G., of the Tuberculosis Department in the Welsh National School of Medicine and a well-known authority upon the scientific aspects of tuberculosis. The report relates to tests carried out at the City Mental Hospital, and is an investigation not only of great interest but of special importance. The tests, so far applied to apparently healthy patients who had been in the hospital some considerable time, indicate previous sub-infection with the tubercle bacillus in almost all these patients. It is intended to extend the investigation, and to institute a systematic examination in order, by the use of these tests and by the taking of pulmonary X-ray films of a series of several hundreds of successive admissions to the mental hospital, to ascertain whether the percentage of



positive reactors is less amongst patients upon admission than among patients who have resided for some years in the hospital. At Rainhill, too, a painstaking inquiry into the incidence of Tuberculosis is engaging the attention of Dr. Reeve and Dr. Carse, especially in relation to an analysis of the causes of the deaths (2,390) which have occurred during the past thirteen years. The highest mortality from pulmonary tuberculosis, they find, is in primary demented, idiots and imbeciles; and there appears to be a relatively high death rate from this disease amongst epileptics. As aids to diagnosis, they find evidence furnished by the weight-book and by a radiogram to be of great value.

*Dysentery, Enteric, etc.*—Reports have been received from 22 institutions, 13 on dysentery, 3 on enteric, and 6 on both.

At Birmingham, typhoid and dysentery have occurred in several new cases and seven old carriers excrete *b. typhosus*. A table shows agglutination results in 8,544 specimens (from March, 1924, to the end of 1933) to typhoid, paratyphoid and dysentery organisms, *b. Gaertner* and *b. aertrycke*. The highest percentage of agglutination was obtained with dysentery (*b. Flexner Y*) and *b. typhosus*. At Wakefield, Widal tests for typhoid and dysentery continue to be done on all probationer members of the staff and all new admissions. All these were negative, with the exception of three positive Flexner and one positive typhoid in 512 direct admissions. It is a tribute to the steady and arduous work carried out at this hospital over a large number of years that only three cases of dysentery and one carrier were detected during the year, all on the female side, and no cases of enteric fever. New typhoid carriers numbered only two, one transferred from another hospital. Routine bacteriological examinations of the stools of new admissions revealed no dysentery organisms, and *b. typhosus* in one, transferred from another hospital. At Wadsley, 23 cases of acute bacillary dysentery (*b. Flexner W & Y* preponderating) occurred. Seven dysentery carriers were found. Prophylactic inoculation with autogenous Flexner vaccine has been carried out in a large number of patients. Four of these developed dysentery, but in three in a very mild form. Illustrative cases are described, and the conclusion is drawn that there is urgent need for an efficient method of treating chronic dysentery and the so-called healthy carrier. From Claybury, Dr. S. W. Hardwick contributes an interesting paper on typhoid carriers. Claim is made for a more reliable method of emulsifying stools for examination. The bacillus was found on only 11 occasions in 341 specimens of urine, and faecal contamination could not be excluded. Seventeen typhoid carriers are mentioned. Attention is called to the greater reliability (Pyper) of the complement deviation test as compared with the Widal. Pyper believes that this test is also suitable for detection of carriers. It is suggested that both methods should be employed. It is stated to be generally admitted that the best



prophylaxis consists in inoculation with T.A.B., which plan has been carried out in certain units of the hospital where an outbreak had occurred. The paper is accompanied by a considerable list of references. At Hereford, routine examination for typhoid bacilli of blood, fæces and urine of new admissions, and systematic search for carriers, are carried out. The water supply was not free from suspicion as it was liable to pollution. No urinary carriers have as yet been found. A carrier of *b. paratyphosus* B died, and the organism was found in the liver, bile and small intestine and in a gall stone. Routine examination of fæces for dysentery bacilli discovered various strains in a number of cases. At Wilts, there were four cases of bacillary dysentery (females); and one male case probably imported. Prophylactic inoculation of all patients on the female side of the main building was carried out. At Leicester City there were twelve cases of dysentery (Flexner Y). Inquiry into the value of vaccination as a prophylactic is proceeding. At Bristol City prophylactic inoculation of all patients with dysentery vaccine (Flexner WX, the organism most frequently found) continues. There was no case of Flexner dysentery during the year, and only one case of dysentery (Sonne). The hospital has been practically free from dysentery since vaccine prophylaxis was introduced five years ago.

*Neuro-Syphilis (including general paralysis). Examination of Blood-Serum and Cerebro-Spinal Fluid in Syphilitics and Non-Syphilitics.*—Statements have been received from 17 institutions. At Birmingham, out of 384 direct admissions in 1933, 175 males and 209 females, the Wasserman test in the blood was found to be positive in 21 and 18 cases respectively; and in the cerebro-spinal fluid in 14 males and 6 females out of 75 male and 21 female cases in which lumbar puncture was done: all the 14 males and 3 of the 6 females were cases of general paralysis. At Warwick, the work on the sera-diagnosis of syphilis has been concluded: 600 sera and 380 fluids have been dealt with. The total results are said fully to bear out the conclusions reached at the end of 1932.\* At Banstead, the Wasserman test was done in practically all direct admissions, but no percentage results are given. At Claybury, research work is in progress on a new colloidal reaction (bi-coloured guaiac) in cerebro-spinal fluid; over 300 cases have been examined. From Macclesfield it is reported that, of the new admissions, twelve (15·19 per cent.) of the males and six (4·80 per cent.) of the females gave a positive Wasserman in the serum: of these, all but one of the males and three of the females were general paralytics. At Park Prewett, the conclusion is reached that the Wasserman in the blood and cerebro-spinal fluid, and other usual tests with the latter, almost always become negative after malarial therapy provided sufficient time has elapsed. The minimum for negativity was 11 months in the 15 cases dealt with. Increased pressure in the cerebro-spinal fluid

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\* See 19th Report, Pt. II., p. 49.



remains. The Meinicke clarification test was felt to be a more sensitive criterion, and invariably remains positive in the two fluids. Negative reactions do not necessarily connote cure or remission. It is, we believe, commonly held that there is no strict correlation between the clinical and serological states. At Hereford, it is found that the Wasserman and Meinicke (microscopic) tests agree in 93 per cent. of cases. Of new admissions, 14·76 per cent. of 34 males were positive (syphilis), three being general paralytics, and 7 per cent. of 43 females, one being a general paralytic. The remaining patients (220 males, 272 females) in the hospital, gave males 9·1 per cent. and females 3·3 per cent. positive. At Hellingly, as a result of comparative methods, the Kahn has been substituted for the Meinicke as a routine test together with the Wasserman. Although a digression, it may here be mentioned that at this hospital ten cases (apparently all suspected cancer) were tested with the Cronin-Lowe modification of the Bendien method. The test was found inaccurate, and the criticisms of the Charing Cross Hospital workers are considered to be confirmed. At Bristol, routine Wasserman testing of the serum has been carried out for the last four years on all new admissions, and the cerebro-spinal fluid was completely examined when the serum was positive. The findings of last year—that positive reactions are much higher in males—are confirmed; 1,177 admissions have been examined, of which 11·6 per cent. were positive. In males and females taken separately, the positives were respectively 17·1 per cent. and 7·3 per cent. Excluding general paralytics, the percentages were, for males, 8·5 and females 3·9. With these results the figures from Hereford (above) may be collated. Such work is undoubtedly valuable. This preponderance of males, which the report states is also the experience of general hospitals, is in Dr. Barton White's opinion, difficult to explain. At Leicester City, the blood has been tested (Wasserman) on 148 direct admissions. Of 66 males, 5 (7·6 per cent.) and of 82 females, 6 (7·3 per cent.) were positive. General paralysis was diagnosed in five males and two females.

From Caterham, in an interesting paper, it is reported that 27 mothers and 5 fathers, parents of congenital syphilitic children in the institution, were interviewed. The fathers gave negative Wasserman and Meinicke clarification reaction in the blood. Of the mothers, 13 allowed their blood to be tested; 6 were strongly positive and seven negative. Of the former, two were of the child-bearing age and one is undergoing anti-syphilitic treatment. The highly important subject of treatment of the parents of the syphilitic child is again referred to in a publication by Dr. K. C. L. Paddle\*, who contributes the above work. The parents of the syphilitic mental defective whose case is recorded had had no healthy issue from the first six pregnancies. After adequate treatment the mother gave birth to a healthy child for the first

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\* *Brit. Journ., Venereal Diseases*, October, 1933.



time. From the Fountain, investigations into syphilis in young mental defectives are recorded—a subject referred to in our last year's Report. Difficulties connected with the unreliability of the Wasserman reaction in children by the ordinary technique, it is said, have been overcome, and accuracy now compares favourably as regards children in this hospital with that of the test in adults. Of 545 cases, 15 (2.75 per cent.) were positive both to this test and to the macro-Meinicke clarification test. It is stated that nearly all recent figures from America are below 6 per cent. The tests were performed at the Central Pathological Laboratory (London County Council). A further eight cases were Wasserman-negative though Meinicke positive. Where possible, the mothers of patients with positive reactions were dealt with. In six, two were positive, and were referred to Venereal Disease centres for treatment. The investigation is in progress.

From Horton, Dr. Nicol sends a copy of a communication\* made by him upon the relation of syphilis to mental disorder and the treatment of general paralysis by malaria. He quotes figures published by Poynder† in 1930 relating to the incidence of syphilis amongst the insane in four of the London County Mental Hospitals. The total number of patients dealt with was 1,792. The figures related to new admissions; they show that, by the Wasserman test, the incidence of syphilis gradually decreased from 1913 to 1924–29 from 31 per cent. to 13 per cent. An apparent decrease in the incidence of general paralysis from 23 per cent. to 9 per cent. is shown. It is observed that many factors have to be eliminated before making a statement, and no conclusion is drawn. As regards differentiation between psychosis in association with cerebral syphilis and general paralysis, Dr. Nicol states that the onset in the former is rapid, in the latter more insidious; in the former there is frequently a definite history of syphilis, whereas the general paralytic often quite honestly denies having had an attack, the symptoms having been so mild as to be unobserved, and secondary reactions are the exception. In mental hospitals, cerebral syphilis is rare; at Horton only seven cases in seven years. The general practitioner should be on the look-out for early pre-paretic symptoms; these, however, are protean. Second courses of treatment by malaria in cases which have not responded to a first course do not afford any hope of further recovery. It is considered fairly certain that if there is no mental improvement within the first nine months after treatment there will be none later. There may be physical improvement.

It is considered that the most important safeguard during treatment by malaria is the temporary abatement of fever by a small dose of quinine (5 grains in mosquito-inoculated, 2½-3 grains in blood-inoculated), in cases causing anxiety. This condition

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\* *Brit. Journ.*, Venereal Diseases, October, 1933.

† *Journ. Mental Science*, lxxvi, p. 107, 1930.



frequently occurs about the fourth or fifth day, before the patient has had sufficient treatment. This procedure renders the therapy comparatively safe. The advantage of the small dose is that the strain of malaria is not lost: after a remission of fever of from 10-18 days, during which strength is regained, the attack which re-commences is seldom so severe as the first. The indications for temporary interruption are those well recognized: a change of the intermittent type of fever to a remittent may be mentioned. It is not uncommon for treated cases to exhibit completely negative serological findings, but there appears to be no correlation between a negative c.s.f. and recovery from mental symptoms. The brain of a treated paralytic presents an altered picture; the thickened meninges are seldom seen, the characteristic perivascular changes are absent, as also are spirochaetes.

*Neurological States, Morbid Anatomy and Histology.*—An examination of the capillary blood-supply of the brain, undertaken at Birmingham, is being systematically carried out. At Wadsley, histological examination of the cerebral cortex was made in three cases of Alzheimer's disease. It is considered that the condition is less rare than is generally believed, also that a clinical differentiation from other presenile dementias (including Pick's disease) cannot be made with any certainty, an opinion to which probably many who have made the attempt, and perused descriptions of these states, will subscribe. A further observation, requiring further investigation, is to the effect that nerve-cells apparently dividing have been found in adult brains in man and animals (in "numerous pathological human and normal animal brains"). It is recognized that this is contrary to accepted teaching. Seventeen brains from cases of epidemic encephalitis have been examined, and an attempt is being made to correlate the type of mental disorder shown and the changes in the brain.

From Rainhill (Lancs.) we have received a report on a small series of intracranial tumours.

At Leavesden, Drs. Stewart and W. Ross Ashby have continued their work upon the morphology of the brain in mental deficiency. Their final conclusion is that, contrary to Spitzka, the area of the corpus callosum shows no specific correlation with mental age. Techniques for the measurement of the mean thickness of the two layers of the cerebellar cortex, and of the layers of the cerebral cortex, have been worked out, and have been, or are being, applied. The chief findings from a study of juvenile general paralysis\* are as follows:—(1) About 1 per cent. of all cases of congenital syphilis develop paralysis, the sexes suffering equally. (2) The age at onset is usually between the tenth or sixteenth years and the duration longer than in the adult type. (3) Stigmata of congenital syphilis may be entirely absent. (4) Two types; in one the patient has been defective from birth, in the other, the symptoms appear in a child of normal mental

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\* R. M. Stewart, *Journ. Ment. Science*, 1933, lxxix, 602.



development. (5) Laboratory findings closely resemble those in the adult. (6) Treatment by malaria and arsenical preparations is seldom effective. At Bristol, twelve brains of general paralytics, examined histologically, show that in cases which have improved after malarial treatment there is much less vascularity than in untreated cases. This agrees with the Horton findings above referred to. At Menston, the pathology and clinical histories of cerebral tumours have been investigated. The tumours included endothelioma, glioma and sarcoma.

At Stoke Park Colony all brains obtainable of deceased defectives have been preserved. These are for macro- and microscopic examination, which is being carried out.

*Therapy (excluding treatment of septic foci referred to previously and including treatment of general paralysis, concerning which reports have been received from 18 institutions).*—At Winwick, Drs. J. E. Nicole and E. F. Fitzgerald have reviewed for publication the results of the first ten years of malarial treatment as applied to 245 out of 368 male cases of neuro-syphilis, all but 19 being general paralytics. The expectation of life after admission to hospital was found to be well within two years in the non-malarialized; whilst, in over 35 per cent. of the malarialized, life was prolonged “far beyond three years,” 27 per cent. being discharged. Additional treatment, such as bismuth and arsenic, seems to hasten clinical improvement. The blood and fluid reactions have borne no relation to the presence or absence of clinical improvement. It may be said that malaria improves bodily health in some 35 per cent. of cases, has a beneficial effect upon habits and cleanliness, and in about 19–20 per cent. it results in clinical improvement likely to last many years, and often allows resumption of useful home-life. This modest view is, we believe, in accord with experience in general.

At West Park, 130 cases of general paralysis have been treated with sulphur in oil followed by arsenical preparations. The work is in progress. From Hereford, Dr. Pakenham-Walsh contributes an account of the chemotherapy of general paralysis. He points out that this treatment implies the use of drugs that will penetrate the haemato-encephalic barrier more readily than the usual anti-syphilitic remedies. The account deals with the physico-chemical principles involved, and records three cases of general paralysis treated.

At Cheddleton, malarial treatment of general paralysis is being given in three courses, each followed, after a month's interval, by 12 weekly injections of three grammes of tryparsamide. Patients discharged return for further treatment. It is too soon to give figures about this procedure. Its aim is to pursue treatment beyond mental recovery and to cure infection as evidenced by negative tests of the blood and c.s.f. Negativity is therefore accepted as evidence of cure. Present experience is that cases which do not begin to improve mentally after the first course



do not improve after subsequent courses. Bristol have furnished a report upon 54 cases of general paralysis treated by malaria during the past four years. Of these, 33 were considerably improved mentally and physically. Twelve of these 33 were discharged, of whom only one has returned ; the remainder are all leading useful lives, and many have remained well for two or more years. Little correlation is found between the mental state after treatment and the serological findings. At Leicester City, ten years of malarial treatment of general paralysis has resulted in : discharged, 23·5 per cent. ; improved, 2·9 per cent. ; unimproved 21·6 per cent. At Newcastle, treatment consisted in malarial inoculation and a course of tryparsamide. Since inception of the former in 1927, 31 patients have been discharged, and only one was re-admitted. At Devon, where ten cases of general paralysis received malarial treatment, Dr. Eager reports the employment of sporozoites suspended in defibrinated blood in one case, making the third attempted, and the only one in which infection was conveyed. If this method proves successful, direct blood inoculation, with its possible complications, is avoided ; also the method of bite-infection, with its difficulty in respect of transport. The sporozoites had been in suspension for five days. The total cases treated up-to-date is 71 ; 38 per cent. have been discharged, four of whom have returned.

Sulfosin treatment has proved disappointing. If, as we think, this and other forms of promoting pyrexia have, in general experience, proved inferior to malarial treatment, and the latter sometimes produces improvement without febrile attacks, the argument for the immuno-biological action of malaria in general paralysis is strengthened.

There is still, we believe, much scope for the follow-up procedure in discharged cases of general paralysis over a prolonged period, so that the results of treatment may be accumulated and the serological findings in the best instances of mental and physical amelioration ascertained wherever possible.

Reports regarding treatment in conditions other than general paralysis are as follows :—

At Rainhill, in 13 advanced cases of mental disorder following upon epidemic encephalitis, intensive treatment with atropin resulted in only temporary improvement in the physical state. Treatment of the same group by stramonium produces results on the physical condition such as have frequently been described, an improvement ceasing when the drug is withdrawn. At West Park, cases of encephalitic Parkinsonism were treated with trypan-blue, but derived no benefit. Cases of schizophrenia, with massive doses of alkali, with like results ; of the rationale of this treatment we are uncertain. At Ipswich the sulphur-treatment of dementia praecox proved disappointing and was discarded.

At Swansea two cases of severe Sydenham's chorea with symptoms of a delirious type (females : aet. 23 and 13) were



treated successfully by somnifaine to produce deep and long sleep, toxaemia being guarded against by glucose and insulin. Continuous baths and occupational therapy followed. One recovered and the other reached a convalescent stage. The advantages of this treatment are emphasized. Having regard to the uses of somnifaine-narcosis, discounted in the view of many by reason of attendant toxic indications, the work done at Cardiff to show that the disturbance of carbohydrate metabolism by the narcotic (attended by these indications) could largely be obviated by the administration of glucose and insulin, is of much practical importance. The subject has been dealt with by Dr. Strom-Olsen.\* The results of treatment of 100 mixed cases at Cardiff, we understand, will be published shortly by Drs. McCowan and Strom-Olsen.

The value of a daily dose of carotene (Pro-Vitamin A), with a view to increasing weight and to physical improvement, has been tried at Cardiff upon a number of poorly-nourished patients. The cases were grouped as (a) chronic dementia praecox, (b) senile dementia, (c) convalescents from manic-depressive or confusional attacks. Several in groups (a) and (b) increased in weight. In group (c) there were some striking results; in most cases rapid increase in weight with corresponding physical and mental improvement. The work is being continued under the supervision of the bio-chemical laboratory.

In conjunction with the research laboratory of the Hoffman-Larache Company, Dr. Davies (of the above laboratory) is investigating, in co-operation with the medical staff, the anti-epileptic properties of certain drugs, with a view to discovering one either less toxic or more powerfully anti-epileptic than those available.

Ultra-violet treatment was applied to eight cases at Wadsley. The only other references to light therapy are from St. Andrew's Hospital (Northampton), where also radiant heat and diathermy are used and Exminster (Devon). Forty-seven patients were treated, in two cases treatment was discontinued, all the rest showed mental improvement and 34 showed physical improvement. There is some evidence that this treatment increases agitation and it may be undesirable in instances of that state. The subject is fraught with difficulty, connected with the points of concentration upon one form of treatment and of controls; but information, as precise as possible, on the value of these forms of treatment in various psychoses—without reference to gross or obvious associated physical disorder—is needed.

From the point of view of complete examination of patients, clinical laboratory tests, and of treatment, Dr. Rambaut emphasizes the value of the Reception Hospital (Wantage House) at St. Andrew's. Its hydro-therapeutic department is considered to be the most valuable unit in the hospital. Amongst the many

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\* *Journ. Ment. Science*, October, 1933.



types of mental disorder for which hydro-therapy is useful, the arterio-pathic group is prominent ; the distressing insomnia from which these patients suffer is much helped thereby. Reference is made to an apparent retardation of rate of deterioration in these cases by gradual reduction of blood pressure. Not forgetting the work in this relation done ten years ago at Oxford,\* the subject seems worthy of further investigation. In connection with a report upon a case of pernicious anaemia from this hospital, reference is made to three cases of severe anaemia reported upon in 1931. Alike in these and in the present case there was a specific mental syndrome marked by delusions of persecution and suspicion. The mental condition in such cases, as would be expected, improves with the physical under modern methods of treatment. From Croydon Borough a contribution has been received, being an extract from a thesis,† which deals with the rôle of hypnotics in mental hospital practice. A comparison of the relative merits of various hypnotics, based upon 5,000 cases, showed paraldehyde to be the safest and most reliable ; and, where there is restlessness or where a prolonged effect is desired, sulphonal to be the most satisfactory. The barbiturates are considered to be of very limited value for psychotics, apart from luminal in epilepsy.

*Psychotherapy.*—In a report from Swansea, whose contribution as a newly-opened mental hospital we are glad to welcome, two cases treated to recovery by psycho-therapeutic methods are described. We wish that reference to this form of treatment were made more frequently in the communications we receive. With the extension of out-patient centres and with the treatment of patients upon a voluntary footing, under the operation of the Mental Treatment Act, it is to be hoped that contributions under this heading will become more frequent. It is considered at Swansea that the results obtained in the two cases justify the broad conclusion that, in certain selected cases, psychological treatment is the method of choice. One of them was “an apparently hopeless demented case of schizophrenia.” The therapy included induction of a period of twilight sleep with somnifaine intra-muscularly at six-hourly intervals for almost a month. During this time the mental condition was one approaching deep coma, the patient being fed by tube. Improvement began quite suddenly, apparently one month from the commencement of treatment. The patient was discharged recovered. Initial treatment included heavy doses of sedative. So that, in addition to psychological methods of reasoning and persuasion and the gaining of the patient’s confidence, and the elucidation of his mental attitude (all of which are duly described), it would seem that physical therapy, as above indicated, played a part, and is entitled to a share of the credit as regards the result produced.

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\* See 11th Report, p. 145.

† Dr. T. P. Rees, M.R.C.P., D.P.M. Thesis approved for the Doctorate in Medicine (University of Wales).



The other case was that of a chronic neurotic subject of six years' standing, and illustrates the result of psychological exploration and psychotherapy. Treatment lasted three months, and the patient apparently recovered.

*Experimental Psychology.*—At Bethlem, references to the work of the Psychological Department cover the Spearman Factors (a continuation of the work reported last year), "The P. Factor in Schizophrenia," "Attitude towards Time," "The Psychology of Perseveration." Papers on these matters have appeared\* or have been accepted for publication.

*Genetics, History, After-History.*—At Ewell, the investigation into the after-history of patients discharged since 1927, referred to in our last report, is ready for publication. From the Royal Eastern Counties' Institution (Colchester), we have received a report upon the activities of the Research Department for investigation into the causes of mental deficiency, this research being now in its third year. An anonymous gift of £300 a year for three years has enabled a second social investigator to be appointed, and one well trained for the purpose. The plan of the complete clinical mental and physical examination of the 1,500 patients in the Institution, with investigation of their personal and family histories, has reached the stage at which 1,000 have been examined and 600 family histories taken. Intelligence tests of children related to the patients have been made. Special investigations include the study of relationship of head-size to intelligence and of the part played by birth-order in the production of mental defect. Mongols, as is largely believed, are most often found towards the end of a family. It has been demonstrated that maternal age is a much more important factor than birth-order. As regards head-size and intelligence, there is a loose relationship; proceeding from the mentally normal downwards, through feeble-minded to imbeciles and to idiots, heads are found, on the whole, slightly smaller. The relationship is not exact enough to allow of prediction of intelligence by head measurement. The relative smallness of size of low grade cases is not confined to the head. The relationship between weight and intelligence is closer than that between head-size and intelligence. This confirms, it is stated, the findings of Dr. Ashby at Leavesden. Five important publications by Dr. L. S. Penrose are cited and one by Miss D. Newlyn, their trend is briefly indicated. A large number of routine mental tests, it may be added, have been carried out by the medical officers, in addition to those made in the Research Department. Blood-grouping has been done in 13 cases. At Stoke Park Colony (Bristol) a commencement has been made with an inquiry (unselected, non-institutional cases, with controls) into the possible hereditary transmission of mental disorders. The line of research—laid down before the publication of the Report

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\* *Journ. Ment. Science*, October, 1933.



of the Departmental Committee on Sterilization—practically embodies, it is stated, all the suggestions in paragraph 97 of that Report. Reference is made to publications from the Colony. The Director of Medical Services (Professor Berry) refers to the publication, during the year of the volume of Stoke Park Monographs entitled “Mental Deficiency and other problems of the Human Brain and Mind.” An account is there given of the methods employed at Stoke Park for testing and measuring of defectives.

The communications upon which these comments are based have been sent from only three institutions, only one of which is a mental hospital. We feel that study of the important matters mentioned is largely hampered by the need for trained social investigators in the mental hospital service. Even where such are attached, the appointments are but recent, and time as yet has been insufficient to collect the necessary data. We look forward to an early and extensive interest in the mental hospital service in these matters of human genetics and after-history of patients discharged.

*Biochemistry.*—At Claybury, the estimation of blood-bromide (see as to this the Cardiff report below) and calcium-content in the psychoses is in progress ; the prognostic value of blood-sugar estimation is also the subject of inquiry.

At Stafford, there has been further study of the lecithin and cholesterol content of blood in certain states of mental disorder (schizophrenia, melancholia, confusional states). The lecithin-content was normal : cholesterol was decreased by about 25 per cent. in early dementia praecox ; as chronicity advances there is about 35 per cent. increase, at which the figure remains. In melancholia and confusional states, cholesterol shows but small variations. The coefficient of utilization is low in these groups. In recurrent mania, blood-cholesterol is very high, particularly during an acute attack, and the above coefficient is very high. That no statement is made regarding the possible significance of these findings is not surprising having regard to the state of biochemical knowledge on the metabolism concerned.

The presence of a substance with choline-like (depressor) action in the blood of certain melancholic and confusional states is mentioned. The action is tested on isolated frog's heart. Normally this substance is said to be almost undetectable. In schizophrenic and manic-depressive states, more or less normal tracings are recorded, but in which phase or phases of these disorders is not recorded. Further work has been done on the action of certain coliform organisms on cholesterol. A paper dealing with lipid metabolism in mental disorder was communicated by Dr. Sharpe at the local divisional meeting of the Royal Medico-Psychological Association in April, 1933.

From Bethlem a note has been received regarding changes in blood-fat in psychotic cases, but this investigation is said to be



obscured because of uncertainty as regards diet and no conclusion could be drawn, a statement which seems in need of elaboration.

At St. Andrew's (Northampton), cholesterol in serum or plasma (both, whenever possible) is under investigation as a routine measure, with a view to ascertaining any variation in the content in the alternating stages of the manic-depressive psychosis and in epilepsy immediately and between fits, and in alcoholism. At Leavesden, the content of various lipoids in the cerebral cortex of the mental defective is being studied.

At Cardiff, Dr. Quastel's work on narcosis and oxidations (referred to in our last Report) has developed on logical lines and now shows that substances normally produced in the body have effects on oxidative processes of the brain closely resembling those of narcotics. If, then, these are present in the blood stream in larger amount than normal, they may be, in part at least, responsible for psychotic disturbances; or, if the detoxicating function of the liver is impaired, they might act similarly in ordinary amount. The substances have been found to be chiefly degradation-products from tyrosine and tryptophane: other amines (e.g., mescaline, which, as pointed out, produces hallucinatory disturbance) are involved. Study of liver-metabolism is indicated: this is in hand. The oxidation of fatty acids by the liver is part of the general scheme of investigation. Thin tissue-slices are used in this. It has been found that extensive aceto-acetic acid production occurs in the intact liver *in vitro*—from certain fatty acids and not from others. A publication\* by Dr. Quastel and Mr. A. H. N. Wheatley, B.Sc., on the subject has appeared. The subject of glutathione and carbohydrate metabolism, referred to in the last report, is further dealt with. It is difficult to present such a technical matter in a brief abstract. For those interested, references are given to papers† by M. Jowett and J. H. Quastel. This work, it is stated, clearly indicates the importance of the quantity and distribution of glutathione in tissues on the normal breakdown of carbohydrates. With regard to the significance of bromine in the blood (Zondek), it became apparent that an accurate micro-method of estimation was essential. This has been worked out by Dr. E. D. Yates.‡ By it bromine may be estimated in 5 cc. of blood. Work is now being carried out on the significance of bromine in the blood of psychotics and on bromide-tolerance.

*Miscellaneous.*—The blood-cerebro spinal fluid barrier in the psychoses was the subject of investigation some years since at Cardiff, following upon the work in Germany of Walthers. The subject has aroused interest on the Continent, and a considerable literature has accumulated. It did not seem that as yet any clear

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\* *Biochemical Journal*, 1933, 27, 1753.

† *Biochemical Journal*, 1933, 27, 486; 1934, 28.

‡ *Biochemical Journal*, 1933, 27, 1763.



information of value in diagnosis has emerged. This study has been taken up again at Cardiff by Drs. Strom-Olsen and E. D. Yates (of the biochemical laboratory). Special attention is being paid to alteration of permeability of the "barrier" in toxic states and alcoholic psychoses. Evidence so far indicates that the test has considerable diagnostic and prognostic value. Should this prove to be so, a distinct step forward will have been taken. Later on the rôle of permeability of the "barrier" to bacterial and other toxins, in connection with the pathogenesis of certain types of mental disorder, will be investigated. Dr. S. L. Last and Dr. Strom-Olsen are carrying out a comparative investigation of motor chronaxia in catatonia and chronic epidemic encephalitis. The necessary apparatus was constructed at the hospital under Dr. Last's direction, the condensers used having been tested by Dr. J. Shaxby, Lecturer in Special Sense Physiology, University College, Cardiff. We believe this is the first time that work of this nature has been done at a mental institution in this country. At Cardiff, also, in the radiographic department, a study of the alimentary tract by means of the opaque meal was made in six cases; the results are not stated. This investigation, alluded to in our Eighth and Tenth Reports, was carried out at the same hospital in 1922, and again in 1924.\* With the increase in number of mental hospitals equipped with X-ray apparatus, it is somewhat surprising that this inquiry has not been taken up elsewhere. From St. Andrew's (Northampton) three cases are reported to show the value of radiography in "so-called psychotic patients"; viz., a meningioma of the frontal region, encysted stone in the kidney, and an impacted gall stone. All these recovered from their mental disorder upon treatment. At Wadsley, the findings of Kretschmer on body-form and character are being investigated on 100 cases each of schizophrenia and manic-depressive psychosis, controls being furnished by members of the male staff, drawn from the same district as the patients (97 completed). The inquiry is welcome. The terms "athletic," "asthenic," "pyknic" are used in this country; but with the exception of the investigations carried out, and still in progress, at Oxford,† the doctrines of Kretschmer, it would seem, in the main, have been tacitly accepted or ignored here; not investigated. Reference is made to a publication‡ on bodily disease and mental disorder by Professor A. J. Hall, Sheffield, Visiting Physician at Wadsley; and to work by the Honorary Neuro-Pathologist in conjunction with

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\* The Passage of a Barium Sulphate Meal (in 10 cases of Dementia Præcox), by G. V. Stanford, E. Goodall and Robert Knox (King's College Hospital, London). *Journ. Ment. Science*, Jan. 1922.

Observations on the Passage of a Barium Sulphate Meal in 24 cases of Mental Disorder, by R. V. Stanford and E. Goodall. *British Journal of Radiology*, February, 1924.

† See 17th Report, Part II, p. 80.

‡ *British Medical Journal*, 27th January, 1934.



the physiological department, Sheffield University, on posterior cerebellar thrombosis and other neurological subjects.

At Rainhill, a survey\* has been made of a series of cases of mental disorder with pregnancy. In fifty years only 97 cases have been treated. The prognosis in this comparatively rare form of disorder associated with reproduction is stated to be poor. Elderly multiparous women figured largely in the series. At Ewell, an analysis of the first hundred patients admitted on a voluntary basis is in progress. From Hereford we have received tables to illustrate the Schilling index and polymorphonuclear count after injection of a vaccine of *b. typhosus* and *b. paratyphosus* B. (2 cases), in a case of general paralysis dying of lobar pneumonia (showing a very severe "shift to the left" and a very low "weighted mean"), and in a fatal case of paratyphoid B. infection with similar findings. These records are welcome, as being very unusual in mental hospital work, and as pointing, perhaps, to the desirability of extending such counts to suitable types of the acuter psychoses at suitable phases of the disorder.

From Napsbury, three cases regarded as typical of pellagra are reported; one showed also signs of Addison's disease. This last improved rapidly on marmite, yeast and injections of cortical extract. The other two received marmite alone and recovered. In none was there any mental improvement. These patients had had a full diet and had not refused their food. No case of pellagra had occurred for years. These followed an exceptionally hot summer.

From Littlemore (Oxford County and City) a case of cretinism with typical chronic encephalitis lethargica, which was examined histologically in detail, is recorded. An unusual clinical feature was a hyperpyrexia of 106.4 F., with sudden onset followed by death. A central hyperthermia, as described in the literature, is postulated. Fresh punctiform haemorrhages in the pars and basal ganglia were found. Attention continues to be directed to clinical and anatomical changes which show features resembling encephalitis lethargica and their relationship to so-called influenzal affections with mental symptoms. Earlier researches upon surface-tension with emulsions of the cortex cerebro (temporal lobe) in physiological salt and in c.s.f. were continued. Sudden falls in surface-tension "profites" suggest possible functional significance.†

From Exminster, Dr. Eager reports upon anti-malarial chemotherapeutic tests in collaboration with Colonel S. P. James, M.D., F.R.S., on behalf of the Medical Research Council, a continuation of the previous year's work. It can now be stated

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\* C. B. Bamford, *Journ. Ment. Science*, January, 1934.

† Publications: Thos. S. Good.—Modern Methods of Treatment: Psychological Medicine. *The Practitioner*, October, 1933.

K. O. Newman.—Experimentelle Beobachtungen an normalen und pathologischem Liquor cerebro-spinalis. *Zeit. f. die ges. Neurologie u. Psychiatrie*, 140 Band, 1 & 2 Heft.



that in tertian malaria due to *plasmodium vivax* neither quinine nor phenoquine (ten cases) given in therapeutic doses on the day of infection and for five subsequent days prevents or delays the malarial attack. Whereas five persons who received atebrin in a similar mode showed no sign of malaria within the usual incubation period and remained free "for the remainder of the year." Systematic observation continued during 1933 showed that atebrin did not prevent the malarial attack but postponed its onset far beyond the usual incubation period, thus, in one case, for 89 days from the day of infection, and in another four for 230 or more days. It is pointed out that this property of atebrin might be of high practical utility in military, naval and other activities when prevention of malarial attacks during critical periods was desirable.

From Cefn Coed (Swansea) is reported the result of an investigation of the pressure of the cerebro-spinal fluid in cases representing various types of the psychoses. Much care—as described—was given to technique and obtaining standard conditions. The normal pressure of the intra cranial c.s.f. in an erect man is stated to be negative. The observations appear to refute the view that the pressure of the fluid is raised in general paralysis. Some cases of the dementia praecox type show unusually low pressures; several epileptics had raised pressures; manic-depressives showed no important changes. Among other factors influencing the pressure is that of the mental state at the time of examination.

"Some specific toxins in cases of melancholia" is the title of an investigation at Bethlem Royal Hospital: it is stated that two definite groups have been isolated and will shortly be the subject of a publication. An analysis of the results of treatment in 762 cases, published\* under the title "The Significance of Small Measurements," leads to a plea for attention to small degrees of abnormality on the physical side. From Caterham (London County) two publications have been made upon Human Figure Drawings of Adult Defectives.†

At the Fountain (London County), it was decided to make an attempt to immunize the whole hospital against diphtheria, and a lengthy report upon the subject is presented.

From Nottingham County a contribution has been received concerning a statistical analysis of puerperal psychoses, to determine the influence of mitral disease on their prognosis. No evidence was obtained that the cardiac state adversely affected the prognosis. This inquiry is being extended to ascertain the connection, if any, between cardiac lesions and the psychoses. It may be recalled that some forty years ago the late Dr. Julius Mickle wrote upon this latter subject; it has received attention on the Continent; but, as far as we are aware, nothing

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\* *Proceedings, Royal Society of Medicine*, 1933, Vol. xxvi.

† *Journ. Ment. Science*, April, 1933, and *Proceedings, American Association on Mental Deficiency*, 1933.



of importance has emerged. There was, however, an interesting contribution upon the subject from Dr. Gibson of Oxford in 1930.\*

A new method was evolved at Cefn Coed (Swansea) for the estimation of small degrees of amylolytic (diastatic) power of the cerebro-spinal fluid. It is possible to estimate a value as low as .03 units per c.c., which is stated to be below the normal range. Observations have been made on 55 cases. The suggestion is that the diastase content of the cerebro-spinal fluid may be regarded as a measure of meningeal permeability.

*Clinical Accounts of Cases.*—From Storthes Hall, there was published† a note on the absence of the peroneus tertius in a mongoloid idiot. From Wonford House, a case of idiosyncrasy to sulphonal in a female patient aged 36 years is reported. A 20-grain dose of the drug was given on each of two successive days. Two days later a scarletiniform rash appeared on the trunk and limbs, with slight pyrexia. The rash faded in about five days. Dick's test was negative. About three weeks later the same rash appeared after 20 grains of sulphonal and disappeared as in the other case.

By Order of the Board,

(Signed) L. G. BROCK,

*Chairman.*

(Signed) P. BARTER,

*Secretary.*

Caxton House West,

London, S.W.1.

June, 1934.

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\* *Journ. Ment. Science*, Oct., 1930, p. 632.

† *Journ. Ment. Science*, July, 1933.





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LUNACY AND MENTAL DEFICIENCY

THE

TWENTIETH ANNUAL REPORT

OF

THE BOARD OF CONTROL

FOR THE YEAR 1933

PART II

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PART II

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I.—THE JOINT BOARD OF RESEARCH FOR MENTAL DISEASES (CITY AND UNIVERSITY OF BIRMINGHAM).

A.—*Laboratory Report*.—By Dr. F. A. PICKWORTH, B.Sc., Laboratory Director.

*General.*

Research into the pathology of nasal sinus infections has been continued and many informative specimens have been added to our museum. The study of the histology of the sphenoidal bone in relation to invasion by microscopic organisms is being continued. The investigation of brain capillaries of Mental Hospital patients is being systematically carried out and a number of photographic records have been accumulated.

Several new cases have shown typhoid and dysentery organisms, and seven of our old carriers continue to excrete *B. typhosum*. New cases of positive agglutination of the serum to typhoid and dysentery groups have been found, and a table of the total results is given below. The bacteriological examination of catheter specimens of urines shows, as hitherto, a large proportion containing organisms. A sensitive test for blood, applied quantitatively to the clear serum of specimens sent for Wassermann test, did not show any significant difference in the plotted graphs for the amount of haemolysis in Wassermann positive as compared with Wassermann negative sera. The Friedman test for Anterior Pituitary hormone was negative in a case clinically suspected of pituitary disturbance, in both inter-menstrual and pre-menstrual phases.

*Bacteriological.*

Specimens, 3,860 in number, have been examined: 2,804 from Holmwood and Rubery, 729 from Winson Green, 311 from Monyhull Colony, and 16 from other institutions. 891 Wassermann tests have been carried out, 257 being positive; 703 Widal Agglutination tests, each to 15 different organisms, showed 421 positive agglutinations to one or other of the typhoid-dysentery organisms. Of 144 colloidal gold tests, 29 showed parietic curve. 19 nasal sinus washouts have been examined, 11 by direct film; 21 swabs for diphtheria, 1 positive; 20 cervical swabs, 8 for gonococci; 117 urines; 535 faeces; 370 post-mortem swabs; 37 sputa for T.B., including 9 positive; 2 vaccines have been made.

*Histological.*

Ninety-six specimens have been mounted for museum purposes, these include pathological conditions of the sphenoidal sinus 15, and antra 25. Decalcification and staining for organisms in 18 specimens gave positive findings in 8 sphenoids. 12 sections have been reported upon for malignancy. 140 cytological examinations of c.s.f.; 139 microscopic examinations of urine. 21 brains have been examined with respect to their capillary blood supply and 210 photographic records made; this work is still in the experimental stage. 63 post-mortems have been made with special reference to the examination of the nasal sinuses; one or more sinus showing evidence of past infection in 37 cases; 25 sinuses contained pus; 13 thickened membrane without pus.

*Chemical.*

C.s.f. for globulin, etc., 137; 22 blood sugars; 2 blood ureas; 132 urines for general examination; 4 for lead; 2 for pituitary hormone; 3 faeces for occult blood and a large number of Wassermann sera for the quantitative amount of haemolysis.

The following is a table of agglutination results from 1924 to the present date. It does not include known vaccinated cases.



## AGGLUTINATION RESULTS. March 15th, 1924 to December 31st, 1933.

Total Specimens examined, 8,544; Positive, 4,091. (48 per cent.)

Organism.	Number of Specimens showing Agglutination.		One Organism only Agglutinated.		Mixed. Agglutination.	
		Per cent.		Per cent.		Per cent.
B. typhosum ...	1,174	13·7	416	4·9	758	8·9
B. paratyphosum A...	394	4·6	34	0·4	360	4·2
B. paratyphosum B...	526	6·2	83	1·0	443	5·2
B. paratyphosum C...	134	1·6	41	0·5	93	1·1
B. enter. Gaertner ...	499	5·8	171	2·0	328	3·8
B. aertrycke ...	386	4·5	93	1·1	293	3·4
B. newport ...	111	1·3	11	0·1	100	1·2
B. dys. Flexner Y. ...	2,735	32·0	1,751	20·5	984	11·5
B. dys. Shiga ...	61	0·7	10	0·1	51	0·6

B.—*Clinical Report.*—By Dr. T. C. GRAVES, F.R.C.S., Chief Medical Officer, Birmingham City Mental Hospitals Committee.

*General.*

The work of investigation and treatment of septic and other conditions of bodily disease has been continued by the various departments: Dental, Ear, Nose and Throat, Gynaecological and Ophthalmological, assisted by the Research Laboratory and where required by Radiography.

The special treatment of diseased conditions thus found has been supplemented by colonic irrigation, ultra-violet radiation and non-specific, including protein therapy.

*Syphilitic Disease.*—During 1933 out of 384 direct admissions, 175 males and 209 females, the Wassermann test in the blood was found to be positive in 39 cases, 21 males and 18 females; the cerebro-spinal fluid was tested in 75 males and 21 females, and was found to be positive in 14 males and 6 females, total 20. Of these cases, 14 males and 3 females, total 17, were cases of general paralysis.

Malarial treatment was applied to 15 males and one female, total 16.

Pyrexial Sulphur treatment was given to 2 male general paralytics and one male and 10 female syphilitic cases and pyrexial T.A.B. vaccine was given to one male and 3 females, total 4 cases.

Reports are submitted in relation to work in the Dental and Ear, Nose and Throat Departments.

*Dental Department.*—Visiting Dental Surgeon, Mr. T. YOXALL, L.R.C.P., L.D.S.

*Diseased and Aberrant Third Molars.*

Anomalies of development and disease of third molars are sometimes met with in cases of acquired mental disorder and appear to be responsible for a moiety, and in a few cases for a major part of the symptoms presented.

Whilst these conditions of the wisdom teeth may be responsible for minor degrees and transient phases of mental disturbance one finds, as a rule, that in cases of established mental disorder other diseased states are also present and so, in such advanced cases, it becomes difficult to assign exactly what part in the causation of the psychotic state has been played by these conditions of the wisdom teeth.

In a manner similar to the other teeth the modes of causation of symptoms are Toxaemia, from diseases of the teeth, but also from infection



of the sac and Nerve Irritation which may produce diffuse, referred and local pain or discomfort with or without corresponding motor reactions.

Cases may be divided into two groups:—

(1) Where the course of the psychosis appears to be very definitely improved solely by removal of unhealthy or abnormal wisdom teeth.

(2) Where removal of similar teeth appears to have only a partial effect on the mental state.

#### *Group I.*

Where the course of the psychosis appears to be very definitely improved solely by removal of unhealthy wisdom teeth. In such cases in addition to any Irritation a state of Toxaemia is usually present from infection of the sac. The following is a case where the removal of an impacted unerupted wisdom tooth with abscess of the sac appeared to be the principal means of effecting lasting mental recovery (over five years duration) in a man whose mental instability had been manifest during fourteen years preceding admission to mental hospital.

CASE 1.—A married wholesaler, aged 43 when admitted to mental hospital in May, 1928. First certification. Family not psychotic. In 1914 had an attack of depression with auditory hallucination and attempted suicide, recovered, but a subject every four months to drinking bouts of up to five days duration.

In 1917 an attack of delirium tremens with auditory and visual hallucinations. In 1918 another attack of depression and in 1919 another bad alcoholic bout lasting a month with intermittencies.

Since 1922 more or less continuously depressed and since 1925 delusions of persecution appeared. These had as their basis an hallucination—apparently of common sensation—which he termed “a ray”—which was “worked upon” his head.

To combat this he covered his head with rubber and filled his ears with wax and lead foil, and to mitigate the associated insomnia he—to use his wife’s words—“obtained drugs from the chemist and doped himself”—principally with bromide. Latterly he lost 2–3 stones in weight, and became less capable of exertion, attributed to “heart trouble.”

In 1928 mental confusion became more obvious, the ray delusion was more pronounced and in May, 1928, he was unable to converse normally, severe auditory hallucinations appeared, instructing him to commit suicide.

On admission to mental hospital his general physical state was poor: there was weakness of cardiac and general muscle tone, septic cutaneous rash, slurred articulation, tremor of face and hands, streptococcal stomatitis with abscess of sac of unerupted impacted right lower wisdom: a dental radiogram showed it to be horizontally placed with a track running down behind second molar to a space under the wisdom: five other teeth were also diseased, both nasal passages and the nasopharynx contained copious pus, ears were normal and the tonsils were considered not diseased. Wax was removed from both ears, polyvalent antistreptococcal serum (70 c.c.), was given subcutaneously and continuous colon alkaline saline irrigations removed much mucopus from the bowel. Following these measures the rash cleared, auditory hallucinations ceased, the mental confusion and the restlessness diminished and he became less resistive to treatment, but the “ray” hallucination persisted.

It was now possible to elicit from him that the unerupted right lower wisdom had “been tender on and off for years.”

On June 1st, it and the adjoining second molar were removed. By June 12th, the improvement was definitely enhanced, the mental confusion was much reduced, and he admitted, for the first time, that the “ray” was no longer played on him.

Following this the remaining five septic teeth were removed and further colon irrigations given—the returns no longer showing evidence of an infected bowel. Nasal investigation revealed no evidence of nasal sinus disease, and the nasal passages were free of exudate.

His conduct was now satisfactory, delusions and suicidal ideas were no longer expressed.

He was discharged from the mental hospital in August, 1928, the subsequent reports were satisfactory.

In January, 1934, his doctor reported he was still keeping well at home, and had not required treatment for any physical or mental trouble since discharge. There had been no recurrence of alcoholism, depression, hallucinations or delusions and he appeared to be enjoying life, although he occasionally manifested some irritability.



*Comment.*—In this case, the major treatment was the removal of an unerupted wisdom tooth lying in an abscessed sac which had been locally painful for years, and following this removal there ceased an hallucination which the patient termed “a ray” and considered had been directed on to his head by agencies external to himself. This hallucination appears to have been based on a disturbance of common sensation, probably including heat, referred to the ear and scalp from the diseased tooth.

In addition there were in the later phases of the illness auditory hallucinations based on tinnitus aurium from wax in the external ears. The mental depression and confusion arose from toxæmia from the abscessed sac and other diseased teeth, together with a low grade infection of the bowel originating from these same sources.

In the following case, the predominant treatment was dental, which included removal of unerupted wisdom teeth. Mental recovery began from this treatment.

CASE 2.—A female clerk, aged 28, was admitted to mental hospital on November 3rd, 1927, having threatened suicide by precipitation, refused to take food, and given utterance to delusions of persecution associated with auditory hallucinations: catalepsy was manifested. There was cardiovascular intoxication: amenorrhoea: tonsils had been removed at age of 16. Dental sepsis, roots and carious teeth were present. Radiography showed two unerupted impacted upper wisdoms.

On January 20th, 1928, there were removed the following teeth:—*Right upper:* 1st incisor carious. 2nd molar. 3rd molar impacted unerupted. *Left upper:* 2nd premolar—abscessed. 2nd molar. 3rd molar impacted unerupted. *Left lower:* 1st molar carious. 2nd molar roots, septic.

Following this, amenorrhoea ceased, and the mental state showed a definite improvement.

Nasopharyngeal examination revealed no evidence of sepsis, but as she was now able to state that she had had attacks of nasal obstruction, a nasal sinus examination disclosed infection of a right posterior ethmoid cell. This was treated. The improvement continued. On review of her case she stated that the headaches she formerly had, had ceased, following dental and nasal treatment. She was discharged in July, 1928, and has since kept well.

*Comment.*—In this case, the major treatment was dental and headaches and pains in the head were relieved by dental treatment which included removal of unerupted impacted upper wisdoms.

## Group II.

Cases where the removal of diseased or abnormal wisdom teeth appears to have had only a partial effect on the mental state. In these cases these teeth may have been causing:

*On the sensory side*, local pain or discomfort in the jaw, more or less continuous or periodic; or *referred* pain such as otalgia; or *diffuse* pain with vasomotor disturbances such as facial pallor or nasal congestion; or *on the motor side*, spasm of masticatory muscles or torticollis. In these conditions the mental disorder is mainly caused by disease elsewhere, e.g., nasopharyngeal, intestinal, etc., but the discomforts caused by these teeth undoubtedly play an important part in causing that summation of irritation and toxæmia responsible for the disorganization of mental function.

In some cases the patient may be able to perceive the discomforts normally.

In others the mental confusion may not permit of their normal perception, but they may appear as the basis of hallucinations and associated delusions.

In yet other cases the mental confusion may be too profound to permit even of this perception and the irritation extends to the motor side manifesting itself in irritability, restlessness and anger reactions.

CASE 3.—A single shorthand-typist of 42 was admitted to mental hospital in September, 1928.

A history since childhood of constant “heavy colds in the head” and headaches, the latter increasing in severity in later years; then there appeared depression, ideas of



unworthiness, inability to concentrate, mental apathy, physical torpor—worse last two years—and eventually two serious suicidal attempts with gas. On admission: very depressed, life was not worth living, ideas of reference and wrong doing. Insomnia. Loss of weight. Septic anaemia. Gross oronasopharyngeal sepsis: twenty visible teeth, loose but not painful.

These teeth were removed. Radiographic examination showed an unerupted left upper wisdom tooth. This was removed. Further treatment was necessary including removal of septic tonsils, drainage of empyematous antral and sphenoidal nasal sinuses, colon irrigation and non-specific therapy.

Only after these measures did she show definite improvement and was discharged. Minor relapses occurred in the winter seasons with improvement in the warmer weather, but during the last two years she has made a substantial recovery, and is now keeping well and usefully employed in household duties at her home. She was not a case of gross mental confusion, and was able to appreciate the progress of her case, so on recovery, she was able to say that following removal of the wisdom tooth, she experienced a relief from a local discomfort and some lifting of depression.

CASE 4.—A probationer nurse in general training, following an attack of enteritis, developed a state of mental confusion with exaltation, which, after a transient improvement, became so pronounced as to necessitate admission to mental hospital in August, 1927. Aged 22. Associated there was gross evidence of cardiovascular intoxication with extreme cyanosis of peripheral circulation.

The confusion disappeared immediately following drainage of empyematous left sphenoidal and antral nasal sinuses and removal of septic tonsils.

Soon after the tonsil beds were healed dental treatment was carried out in two stages.

In the first stage on October 7th, the upper left impacted wisdom and lower right non-impacted unerupted wisdom together with the 1st and 2nd carious abscessed right lower molars were removed. Reviewing her case on November 20th, when she was fully capable of discussing it she stated that the removal of these teeth had been followed by the cessation of an unpleasant sensation of tightness in the jaws, but she complained there was still a tight feeling in the left lower jaw.

On December 2nd, the unerupted impacted wisdoms in left lower jaw and right upper jaw were removed.

Reviewing her case on December 11th, she stated that the feeling of tightness in left lower jaw had gone following the dental operation.

On January 12th, 1928, she was discharged, obtained work and has since then continued well.

CASE 5.—A youth of seventeen, a trimmer, was admitted to mental hospital in January, 1927, in a state of extreme mental confusion with auditory hallucinations. There was a history of influenza, a blow on the nose at boxing and of hospital treatment of nasal disease, including septal deviation.

On examination his mouth was exceptionally clean, but nasopharyngeal sepsis was found and treated by drainage of empyematous right sphenoidal nasal sinus and removal of septic tonsils and adenoids.

Following this treatment he improved and had periods of relative lucidity, during which he was able to go on leave from the mental hospital in the care of his father, but these periods were followed by suddenly occurring lapses back into confusion, and these were associated with very pronounced pallor.

He was unable to give any indication, during either of these periods, as to any discomfort preceding or associated with these relapses. The visible teeth continued remarkably healthy, but radiographic examination showed two badly impacted lower wisdom teeth. On December 23rd, 1927, the two wisdom teeth and the adjacent second molars were removed under general anaesthesia.

Another attack of confusion followed this operation, and then a lucid period which continued and became more pronounced than formerly. No further confusion appeared and now the facial colour became more normal. He was now able to state that headaches and attacks of pain in the jaw and face had ceased. He gained 2 stone 10 lbs. on admission weight.

He was discharged from the mental hospital in April, 1928, and subsequent reports have been satisfactory. He gained and kept employment.

In this case it would appear that the confusion was caused by nasal sinus sepsis and recurrence of pain, diffuse in character caused by the unerupted wisdom teeth and these latter were responsible for relapses into confusion.

In the next case the removal of unerupted impacted wisdom teeth together with the diseased teeth was associated with a reduction in restlessness, but objectively no other improvement was observed during two following years. The definite improvement followed removal of septic tonsils.



CASE 6.—A single tile worker aged 22 was admitted into mental hospital on July 7th, 1926, in a state of confusion with auditory hallucinations, after influenza, and considerable reduction of general health and pronounced oronasopharyngeal sepsis. The oral sepsis was treated by the extraction of several carious teeth.

Radiographic examination found the two upper wisdom teeth unerupted and impacted, the adjoining teeth were carious. These were removed on October 12th, 1926.

No dramatic improvement ensued in the mental state but he was less restless and more amenable, still very confused.

During the influenzal seasons of 1927 and 1929 he relapsed mentally although treatment was given for purulent nasal sinuses, eventually in July, 1929, it was decided to remove septic tonsils by dissection.

After this he improved remarkably, physically and mentally and was discharged December, 1929. He has since kept well and obtained work.

CASE 7.—A housewife of 38 was admitted into mental hospital in a state of confusion with hallucinations referable to common sensation, taste and smell and vision.

Gross oral sepsis was present. After this had been treated by extraction it was observed that foetid green pus welled up from sinuses over the unerupted lower wisdom teeth. These were removed. There was also bilateral suppurative otitis media with foetid discharges and nasopharyngeal sepsis. Although these have been treated deafness persists and the deep sepsis maintains a state of chronic toxæmia with resultant dementia.

Her nutritional state and circulatory weakness have nevertheless considerably improved.

In the following case a carious erupted wisdom tooth was responsible for the active manifestations of an anxiety state.

CASE 8.—A housewife of about 30 years of age, complained of recurring fears and extravagant ideas of unworthiness which she was impelled to disclose to her husband, who, being unable to separate false from true was irritated and made suspicious by these compulsive confessions. A vicious circle was thus established between them, and she attended at out-patient clinic to ask for help. Objectively it was manifest that considerable fear was present and probably of endogenous causation. An erupted carious lower wisdom tooth was found. The remaining teeth appeared healthy. This was removed. At the next session of the Clinic she attended to report that she felt better, the fear had gone, ideas of unworthiness had ceased to trouble her and domestic relations had become normal. Objectively there was now calm and composure.

*Ear, Nose, and Throat Department.*—Consulting Surgeon, Mr. E. MUSGRAVE WOODMAN, M.S., F.R.C.S.; Visiting Surgeons, Mr. W. STIRK ADAMS, F.R.C.S., Mr. E. C. N. STRONG, F.R.C.S.

The investigations of previous years into the incidence, the treatment and the remote effects of nasopharyngeal sepsis, including the use of the Watson-Williams technique for the exact ascertainment of sinus disease, have been continued during 1933. The findings thus made have been collated and are given below. Out of 384 direct admissions for 1933, 175 males and 209 females, evidence of nasal disease was recorded in 317 cases, 125 male and 192 female; and in 80 male and 178 female, total 258 cases, the tonsils were also found diseased.

In 293 cases, 135 males and 158 females, the great majority admitted during 1933 or immediately preceding, the conditions found were such as to justify further investigations and treatment and with the following results :—

In two cases nasal polypi were present and were removed, and in two others antral drainage openings which had closed were re-established.

In forty-five cases, 18 males and 27 females, evidence of infection was found at preliminary examination, but later, on critical examination, no gross pathological state was present. In sixty-five cases, 26 males and 39 females, the tonsils alone were diseased and were removed by dissection.

In 179 cases, 87 males and 92 females, diseased conditions were found in both the tonsils and the nasal sinuses and of this number the tonsils were diseased and were removed in 98 cases, 46 male and 52 female, whilst the nasal sinuses only were found to be diseased in 81 cases, 41 male and 40 female.



In four cases, three male and one female, adenoidal disease was present.

*Number of diseased sinuses found.*—The number of clinically diseased sinuses found in these cases is as follows :—

	Male.	Female.	Total.
One sinus only involved ... ..	22	26	48
Two sinuses ... ..	27	24	51
Three sinuses ... ..	11	10	21
Four sinuses ... ..	10	14	24
Five sinuses ... ..	9	7	16
Six sinuses ... ..	8	11	19
Total ... ..	87	92	179

*Anatomical Distribution of Sinus Disease.*—The distribution of the sinusitis, whether associated or not with tonsillar disease in these 179 cases was :—

	Male.	Female.	Total.
Antra alone or with others ... ..	63	69	132
Ethmoids alone or with others ... ..	53	57	110
Sphenoids alone or with others ... ..	42	40	82

*Sphenoidal Sinus Disease.*—In last year's report it was pointed out that the absence of diseased conditions in the antra did not preclude the possibility of diseases in the posterior sinuses, and that any investigation of the sinuses must be deemed incomplete unless the sphenoids are included.

In support of this view the occurrence of 352 cases of sphenoidal disease amongst 1,001 cases investigated was discussed, viz., 35 per cent. An examination of the corresponding findings made during the past year confirm the importance of examining the sphenoids in these cases of mental disorder, for the incidence was found to be higher than the previous figures, viz., 82/179, i.e., 46 per cent.

#### *Publication.*

Discussion on "Acute and Chronic Inflammatory Disorders of the Ethmoidal and Sphenoidal Sinuses." *Proc. Roy. Soc. Med.* June, 1933. Vol. xxvi. No. 8, p. 969.

Contributions by T. C. GRAVES and F. A. PICKWORTH, pages 978 and 979.

## II.—FROM THE CARDIFF CITY MENTAL HOSPITAL.

*General Report.*—By Dr. P. K. McCOWAN, F.R.C.P., D.P.M., Medical Superintendent.

### *Infection of the Nasal Sinuses and Tonsils in the Psychoses.*

Work on this subject has continued throughout the year, and the results obtained have been confirmatory of the views expressed in the undermentioned publication, which dealt with the results of examination and treatment of 807 consecutive admissions to this Hospital. Sinusitis was found in 3 per cent. and tonsillitis requiring operative treatment in a similar percentage of all admissions. In summing up, the opinion was expressed that infection of the nasal sinuses and tonsils is an important causal factor in a small minority of psychotics, that its eradication in these cases leads to cure or amelioration, and that it should always be

looked for and treated vigorously when present. Especial emphasis should be laid on the importance of these infections in the toxic exhaustive psychoses, since here they appear to be comparatively common and frequently causal.

(P. K. McCowan.—*Lancet*, Oct. 14th, 1933, p. 853.)

*Prolonged Narcosis : Toxic Symptoms and their Treatment with Insulin.*

An investigation of the toxic symptoms accompanying prolonged somnifaine narcosis and their treatment was undertaken by Dr. Ström-Olsen. It was found that a large proportion of these symptoms were due to upset of carbohydrate metabolism of the liver and heart by the narcotic. They consisted of ketosis, tachycardia, fall of blood pressure and varying degrees of circulatory collapse. By the administration of insulin and glucose as an integral part of the narcotic treatment, it was found that these toxic symptoms could largely be obviated. Full details of the management and technique of somnifaine narcosis, together with a discussion of complications and contra-indications to treatment, have been published. The results of treatment of 100 mixed cases will shortly be published by Dr. Ström-Olsen and Dr. M. L. M. McCowan.

(R. Ström-Olsen.—*J. Ment. Sci.*, Oct., 1933.)

*Carotene.*

A number of poorly-nourished patients have been given a daily dose of Carotene (Pro-Vitamin A) in an endeavour to bring about an increase in weight and general physical improvement.

The patients so treated can be classified into three groups :—

- (a) Chronic Dementia Praecox.
- (b) Senile Dementia.
- (c) Convalescents from Manic depressive or Confusional attacks.

Several patients belonging to groups (a) and (b) increased in weight, but the most striking results have been obtained in the last group. Here, in most cases, there has been a rapid increase in weight with a corresponding improvement in the mental and physical conditions. The work is still continuing, and Drs. Davies and Quastel hope to publish the results in the near future.

*Anti-epileptic Drugs.*

Dr. Davies, working in conjunction with the Research Laboratory of the Hoffmann la Roche Coy., has tried out two new barbituric acid derivatives on cases of epilepsy.

After prolonged trial, one of these preparations failed to exhibit any properties superior to luminal, and its use has been discontinued.

The other preparation is still being investigated. So far, it is impossible to express any definite opinion as to its value. The aim of this research is to discover a drug either less toxic or more powerfully anti-epileptic than the anti-epileptic drugs already available ; and close co-operation between the clinician and the organic chemist is necessary for this work.

*The Blood-cerebro-spinal Fluid Barrier in Psychoses.*

Work on these lines had previously been carried out in this Hospital by Drs. Goodall and Stanford, and has now been resumed by Dr. Ström-Olsen in collaboration with Dr. E. D. Yates. A modification of Walther's sodium bromide colorimetric method has been adopted, and, in addition, a more delicate quantitative estimation of the blood and c.s.f. bromine were carried out by Yates' method. Special attention is being paid to alterations of the permeability in toxic-exhaustive states and alcoholic psychoses, although other psychoses have been investigated as well. The evidence so far accumulated indicates that the test has considerable diagnostic and



prognostic value, and it is proposed to publish the results of the completed research in the *Journal of Mental Science* in the near future.

In order to assess the role of the permeability of the blood c.s.f. barrier to bacterial and other toxins in the pathogenesis of certain types of mental disorder, it is then intended to investigate the permeability of more complex bodies, such as bacterial agglutinins.

*Comparative Investigation of Motor Chronaxie in Catatonia and Chronic Epidemic Encephalitis.*

This work is being carried out by Dr. S. L. Last in conjunction with Dr. Ström-Olsen. The apparatus has been constructed in the Hospital under the direction of Dr. Last, and is on the condenser principle, the condensers having been tested by Dr. J. H. Shaxby, Lecturer in Special Sense Physiology, University College, Cardiff, a procedure highly necessary for scientific accuracy. It is hoped that sufficient data will have accumulated for a publication towards the end of the year.

*The Psychotic Form of Acute Epidemic Encephalitis.*

The case referred to under this heading in last year's Report (p. 31) has since been published.

(R. Ström-Olsen and J. Gough.—*Lancet*, Dec. 2nd, 1933, p. 1259.)

*Basic Amines and Oxidations of the Brain.*

A development of the work on narcosis and oxidations of the brain (briefly summarized in the last Board of Control Report) now shows that there exist substances normally produced in the body whose effects on the oxidative processes of the brain closely resemble those of the narcotics. The result is of particular significance in the study of mental disorder. The recent investigations of McFarland\* have indicated that the psychological reactions following anoxaemia and light narcosis resemble those found in certain psychotic disorders. It is not unreasonable to consider that if substances normally produced in the body have effects similar to those of the narcotics and can induce an anoxaemia in the nervous system, they may be held, when present in the blood stream in more than ordinary quantities, partially responsible for psychotic manifestations.

The substances in question have been found to be chiefly degradation products derived from tyrosine and tryptophane. Isoamylamine is also very effective. Mescaline—an amine well known for its production of visual hallucinations—is also effective in inhibiting carbohydrate oxidation by the brain.

These facts bring up the question as to whether a disturbance of hepatic detoxicating mechanism may be a causative element in certain types of mental disorder, and hence studies of metabolic events of the liver are now being investigated.

(J. H. Quastel and A. H. M. Wheatley.—*Biochem. J.*, 1933, 27, 1609.)

*Liver Metabolism I. Fatty Acid Oxidations.*

As part of a general scheme of investigations into detoxications of the liver, the oxidation of fatty acids has been investigated. It has been found that by using thin (intact) tissue slices it is possible to study hepatic oxidation on strictly quantitative lines and that, whilst the results of early perfusion studies can be confirmed, it is possible to obtain much more quantitative data and to discover the effects of alterations of physiological conditions. In particular, it has been found that extensive aceto-acetic production occurs in the intact liver (*in vitro*) from butyric acid and other

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\* Psychological Effects of Oxygen Deprivation on Human Behaviour.—*Archives of Psychology*, 1932 (New York).



fatty acids containing an even number of C. atoms—but that other fatty acids, whilst being vigorously oxidised, fail to yield aceto-acetic acid. The aceto-acetic acid production is not influenced by such antiketogenic substances as glucose or lactic acid, but glycogen has a definite inhibitory action—there being no evidence, however, that the presence of glycogen leads to an increased oxidation of the fatty acid. The results, so far, point rather to a sparing of fatty acid oxidation by the glycogen. If intact liver tissue is damaged (as by mincing), the oxidations of fatty acids cease. Moreover, these oxidations depend greatly on the presence of calcium ions in the medium; an isotonic medium devoid of calcium ions in which intact liver tissue is suspended brings about a greatly decreased production of aceto-acetic acid.

(J. H. Quastel and A. H. M. Wheatley.—*Biochem. J.*, 1933, 27, 1753.)

### *Glutathione and Carbohydrate Metabolism.*

In connection with the general problem of the significance of sulphur in the central nervous system, work is being carried out on the connection between the naturally occurring sulphur compound—glutathione—and carbohydrate metabolism.

Studying one aspect of carbohydrate metabolism—glyoxalase activity—it has been found that the substrate for this activity, i.e. methylglyoxal—combines with glutathione, and it is this compound which breaks down in presence of the widely distributed enzyme, glyoxalase, to form lactic acid. For this reason, glutathione is the co-enzyme of glyoxalase. By means of this discovery it is possible to understand—at any rate partially—one important property of carbohydrate breakdown in tissues; viz., the inhibitory action of oxygen. Studying the red blood cell it has been found that the inhibitory effect of oxygen on lactic acid production can be interpreted in terms of an equilibrium between oxidised and reduced glutathione.

Turning to such tissues as liver, kidney and brain, it has been found that, owing to the special properties of methylglyoxal, it is only possible to study satisfactorily such organs *in vitro* by reference not to the weights of such tissues (the usual mode of reference) but to the surface areas. With those tissues it has been found, as with the red blood cells, that oxygen exerts an inhibitory effect on glyoxalase activity and all the evidence points to the effect being partially, if not wholly, due to the action of oxygen on glutathione. Other evidence supports the view that the inhibitory action of oxygen on glycolysis from glucose is based to some extent on a similar phenomenon, and the work, therefore, clearly indicates the importance of the quantity and distribution of glutathione in tissues as significant factors in the normal breakdown of carbohydrates under physiological conditions.

(M. Jowett and J. H. Quastel.—*Biochem. J.*, 1933, 27, 486.)

(M. Jowett and J. H. Quastel.—*Biochem. J.*, 1934, 28.)

### *Sulphur Compounds and Toxicity to Enzymes.*

The importance of naturally occurring sulphur compounds in protecting certain enzymes from destruction is shown by their effects on a commonly distributed enzyme, urease. This enzyme is poisoned by certain polyhydric phenols—catechol, for instance, poisoning the enzyme at a concentration of one part in  $2\frac{1}{2}$  millions. This toxicity is entirely eliminated by the presence of sulphur compounds, such as cysteine or glutathione, and it has been shown that the toxicity is due in the first place to quinones (which are widely distributed in the plant and animal kingdom), and that the elimination of toxicity is due to a reduction of the quinones by the sulphur bodies to inert substances.

(J. H. Quastel.—*Biochem. J.*, 1933, 27, 1116.)



*Estimation of Bromine in Blood.*

Work is being carried out to confirm that of Zondek on the significance of bromine in the psychoses. It has been essential to discover an accurate micromethod for Br. estimation, and this has been done by Dr. Yates. With this method, bromide may be estimated in 5 c.c. of blood by precipitation of protein with tungstic acid under standard conditions, evaporation of the filtrate, ignition in nickel, and oxidation with chromic-sulphuric acid mixture of specific oxidation potential. Br. is estimated by absorption in potassium iodide and titrations with thiosulphate.

The method is accurate to 2 for 5—1,000 Br.

(E. D. Yates.—*Biochem. J.*, 1933, 27, 1763.)

Work on the *significance of Br. in the blood of psychotics* and on *bromide tolerance by patients of various types* is now being carried out, the clinical investigations being in the hands of Dr. Hennelly.

*Tuberculin Tests.*

In the following report, Prof. Cummins deals with the question of tuberculosis from the physical aspect, and the results recorded are highly significant. I would point out that the subjects examined were chiefly old standing cases of dementia praecox, and that in my opinion this may be as important as their environment in explaining their tendency to tuberculosis. There is undoubtedly a close relationship between tuberculosis and dementia praecox, a relationship which family histories suggest may even be of a hereditary nature. The field is undoubtedly one which will repay intensive study.

*Tuberculin Tests at the Cardiff City Mental Hospital.*—By Professor S. L. CUMMINS, C.B., C.M.G., LL.D., M.D., Tuberculosis Department, Welsh National School of Medicine.

In 1929 and 1930, a total of 104 apparently healthy, chronic patients, 52 males and 52 females, were tested with tuberculin by the "Mantoux" intradermal method. Of these, 94, or over 90 per cent. gave "positive" reactions, proving previous sub-infection with the tubercle bacillus.

Of the 104 tested patients, 18 have died and 7 have been discharged since the date of testing. Of the 18 deaths, 10, or 55 per cent. had been caused by tuberculosis.

In the general population of England and Wales at the last Census Period (1931), tuberculosis accounted for 7.3 per cent. of the death-rate from all causes; and, when calculated for the age period 20—65, roughly corresponding to that of the mental hospital population, 11.2 per cent. It will be seen, therefore, that the tuberculous deaths amongst the 104 mental patients studied are far higher than in the general population. The numbers studied are, of course, small; but still the difference is so great as to be significant.

Two further studies have been carried out recently, with the help of Dr. McCowan and his staff.

*Intradermal Tests.*—During November and December, 1933, a group of 25 apparently healthy, chronic male patients were tested by the intradermal tuberculin test (1/2000) and all were found to give a positive reaction. In this series the outstanding fact was the universally present hypersensitivity to tuberculin and tubercle bacilli.

*Sub-cutaneous Tests.*—A further 25 apparently healthy, chronic male adult patients were tested sub-cutaneously with serial dilutions of Old Tuberculin; in quantities of 0.0001, 0.001, and 0.01 c.c., the volume of fluid injected being, in all cases, one tenth of a cubic centimetre.

There were several withdrawals and replacements, so that the group



was finally reduced to 20 patients carefully followed through. Of these, the positive reactions were as follows :—

Tuberculin.	0.0001 c.c.	0.001 c.c.	0.01 c.c.	Negative.
Positives.				
Total.	1	5	16	4
Per cent.	5 per cent.	25 per cent.	80 per cent.	20 per cent.

A “positive” to this test implies a rise of temperature above 99° F. It may be said that the majority of the positive reactors attained to temperatures of over 100° F., the highest being 102° F., and, further, that blood examinations carried out in connection with the tests indicated considerable constitutional disturbance passing off rapidly after the test period.

Many would consider these results to be diagnostic of active tuberculosis. A careful physical and radiological examination of the patients failed, however, to elicit any evidence of the presence of active foci in the lungs of the patients in this group. While it is very unusual to get a “positive” to the sedimentation test in a healthy adult in this country, it was shown by Franz (in 1909) that 61 per cent. of a batch of 400 recruits for the Austrian Army, drawn from a neighbourhood known to be highly infected with tuberculosis, were “positive” to the sub-cutaneous tuberculin test (0.003 c.c. of Old Tuberculin), though otherwise in good physical health. It is probable that at least 80 per cent. would have been found positive to 0.01 c.c. It can hardly be claimed, therefore, that the test is to be regarded as diagnostic of active tuberculosis. It should be added, however, that the percentage of these Austrian recruits developing active tuberculosis in their subsequent military service was inordinately high (7.6 per cent.), suggesting that many of these men harboured latent tuberculosis verging on active disease. The finding of such an exceptionally high incidence of positive reactors, 80 per cent. to the strongest concentration of tuberculin, amongst the male adult population of the Cardiff Mental Hospital suggests that there probably exists some source or sources of infection to which the patients are repeatedly exposed in the course of their daily life in the Institution; a suggestion which gains support from the inordinately high subsequent tuberculosis mortality amongst those patients found to be positive to the Mantoux test in 1929 and 1930.

In this connection, the possibility arises that there may exist amongst the patients a certain number of “open” cases of tuberculosis of the relatively chronic and symptomless type so apt to escape detection even under the best medical supervision.

It is proposed to institute a systematic examination, by intracutaneous tuberculin tests and pulmonary X-ray films, of a series of several hundred successive “admissions” to the Cardiff City Mental Hospital to ascertain whether cases of this type do occasionally enter, and whether the percentage of positive reactors is less, amongst persons on admission, than amongst those who have resided for some years in the Institution.

A careful search for “healthy carriers” in the existing Mental Hospital population also appears desirable. For a group of persons destined to pass many years in close and intimate contact with their fellows, the problem of tuberculosis must necessarily be one of difficulty and importance, and it is a matter of common knowledge that the population of mental hospitals suffer to a greater extent than the general population of these Islands from tuberculous disease.

In any investigations initiated in the directions suggested, the Tuberculosis Department of the Welsh National School of Medicine would gladly participate. The invariable kindness, and the effective help so freely offered by the Medical Superintendent and his staff in the preliminary observations here summarized has been much appreciated and is a happy augury for future co-operation.



*Radiographic Department.*

A study of the alimentary tract, by means of the opaque meal, was made in 6 cases during the year.

Radiographic examinations of the accessory nasal sinuses were carried out at the request of the visiting oto-rhino-laryngologist in 11 cases.

For various medical or surgical reasons, 87 other patients were X-rayed during the period.

*Routine Pathological Work.*

The following examinations were made :—

Urine : ordinary routine examinations, 516 ; microscopical, 52 ; bacteriological, 15 ; sugar estimations, 429 ; albumen, 429 ; ketones, 429 ; urea concentrations, 19 ; for urobilin in, 2. Blood : glucose tolerance, 196 ; red cell counts, 226 ; white cell counts, 270 ; differential counts, 8 ; bacteriological examinations, 4 ; icterus index test, 2 ; fragility tests, 1 ; urea estimations, 19 ; platelet counts, 2 ; examinations for malarial parasites, 317 ; Wassermann tests, 244 ; blood sugars, 7 ; reticulocyte counts, 10 ; other blood films, 13 ; a few Van den Bergh reactions. Cerebrospinal fluid : bacteriological examinations, 2 ; colloidal benzoin reactions, 55 ; cell counts, 57 ; Boltz acetic anhydride reactions, 55 ; globulin reactions, 55 ; Wassermann tests, 57 ; Sinus washings : A considerable number of bacteriological examinations were carried out on these. Sputum examinations, 25 ; bacteriological examination of faeces, 7 ; (*B. faecalis alkaligenes* isolated from one of these) ; occult blood in faeces, 1 ; fractional test meals, 6 ; a few pus examinations ; a few throat swab examinations ; a few histological examinations of post-mortem specimens, and specimens obtained from operations.

## III.—FROM THE WEST RIDING MENTAL HOSPITAL, WAKEFIELD.

A.—*General Report on Treatment Centre.*—By Dr. M. J. McGRATH, D.P.M., Acting Medical Director.

1. *Out-Patient Department.*

During the year, two additional Out-Patient Clinics were started. In January an Out-Patient Clinic was started at the Clayton General Hospital, Wakefield. In September a Clinic was opened at the General Infirmary at Leeds. Both these Clinics are staffed by members of the Medical Staff of the Mental Hospital, and one Session each week is held. The number of new cases seen at the Clayton Hospital, Wakefield, was 61, and the number seen at the General Infirmary, Leeds, was 26.

The work of the Out-Patient Department at the Mental Hospital continues to increase.

No. of attendances in 1930, 1,216 ; 1931, 1,377 ; 1932, 1,543 ; 1933, 1,659.

	Males.	Females.	Total.
Out-Patients on Register on December 31st, 1932	84	131	215
Struck off Register ... ..	19	40	59
Admitted during 1933 ... ..	26	38	64
Remaining on the Register on December 31st, 1933 ... ..	91	129	220

2. *The Operating Theatre and Recovery Rooms.*

Fifteen major and 28 minor operations were performed in the theatre, and a number of minor treatments were carried out.

3. *Sun Ray Department.*

The Sun Ray Department has been undergoing alterations during the year which have somewhat interfered with the work. During the year, 25 patients were treated and the number of attendances was 413.

4. *X-Ray Department.*

Two hundred and sixty-five photographs have been taken.

B.—*General Laboratory Report.*—By Dr. M. J. McGRATH, D.P.M.1. *Widal Examinations for Typhoid and Dysentery of all new admissions.*

Widal examinations for typhoid and dysentery have been carried out during the year on all probationer members of the staff and on all new admissions.

The results are tabulated below, and it is interesting to note the negative results obtained with the members of the probationer staff.

Admissions.					Positive Flexner.	Positive Typhoid.	Negative.	Total.
Male	...	...	...	...	1	—	239	240
Female	...	...	...	...	2	1	269	272
TOTAL					3	1	508	512
Probationary Staff—								
Male	...	...	...	...	—	—	9	9
Female	...	...	...	...	—	—	42	42
TOTAL					—	—	51	51

2. *Routine work of the Laboratory.*

A summary of the 5,899 routine examinations carried out in the Laboratory during the year is given below.

Bacteriological examination of faeces, 3554; Widal's, 1296; urine, 162; histological preparations, 151; animal inoculations, 118; Wassermann reactions—blood, 111; c.s.f., 94; Lange colloidal gold reactions, 89; blood flocculation tests, 65; sputa, 52; milk chemical, 48; blood counts, 36; p.m. scrapings, 30; pus, 22; cuttings from gum mastic reaction, 18; skin scrapings, 15; throat swabs, 12; faeces for occult blood, 12; hair for ringworm, 6; blood culture, 4; pleural effusions, 3; vomit, 1.

Twenty autogenous vaccines were prepared during the year and used for treatment purposes.

*Animal Inoculations.*—During the year, 118 animal inoculations were carried out under the provisions of the Home Office Licence.

*Milk Analyses.*—One hundred and three milk samples were examined during the year and in seven instances the samples were found to be tuberculous. The tuberculous samples occurred during the months of January, February, March, April, May and November.

*Pathological Museum.*—Several new specimens have been added to the collection during the year.

C.—*Asylum Dysentery and Allied Infections (Fifteenth Post-War Report).*—By Dr. M. J. McGRATH, D.P.M., and Mr. A. L. HOWDEN, F.R.M.S.1. *Dysentery.*

Three cases of dysentery and one dysentery carrier were detected during the year amongst the female patients.

Two cases, one of which was a recurrent case and the carrier, occurred in the female dysentery ward F.6. Both cases recovered.



The remaining case occurred in the Chronic Female Ward 30, on January 27th, 1933, and died on February 16th, 1933.

A summary of the cases and the bacteriological examinations is given below :—

1. January 27th, 1933. S.B., age 56. Admitted October 15th, 1927. Died February 16th, 1933. Ward 30. B. dys. Flexner "Z" isolated from faeces.

February 16th, 1933, patient died. Post-mortem 4975—Intense congestion of small gut. Thick dark mucus in ileum. Intense purplish congestion, with fine superficial greyish sloughs and small shallow ulcers in lower end of large gut. B. dys. Flexner "Z" and B. proteus isolated from bowel scrapings.

2. February 23rd, 1933. H.R., age 70. Admitted January 14th, 1931. Ward F.6.\* B. dys. Flexner "Y" isolated.

2A. February 28th, 1933. E.S., age 25. Admitted June 20th, 1931. Ward F.6.\*, B. dys. Flexner "Y" isolated from an apparently normal stool during the routine investigation of ward contacts.

3. December 13th, 1933. M.D., age 58. Admitted July 17th, 1920. Ward F.6.\* B. dys. Flexner "V" isolated. This patient had previously contracted dysentery in September, 1926.

There were no cases of dysentery in any of the Male Wards during the year. Four cases of diarrhoea occurred in the Chronic Male Sick Ward 35 during September and in each instance B. ceylonensis (Castellani) was isolated from the faeces. The cases were non-fatal and quickly responded to ordinary treatment.

A summary of the cases and the bacteriological examinations are given below :—

1. September 8th, 1933. A.C., age 71. Admitted June 17th, 1933. Ward 35. B. ceylonensis "A" (Castellani) isolated.

2. September 12th, 1933. A.E.M., age 68. Admitted July 16th, 1932. Ward 35. B. ceylonensis "A" (Castellani) isolated.

3. September 21st, 1933. N.B.A., age 61. Admitted November 11th, 1921. Ward 35. B. ceylonensis "A" (Castellani) isolated.

4. September 22nd, 1933. T.H., age 69. Admitted July 6th, 1930. Ward 35. B. ceylonensis "A" (Castellani) isolated.

## 2. Enteric Fever.

There were no cases of enteric fever during the year.

## 3. Typhoid Carriers.

Two new typhoid carriers were detected during the year, one of which was a transfer from another mental hospital.

We now have seven typhoid carriers isolated in Ward 21.

During the year, Wilson and Blair's medium has been used in addition to MacConkey's medium for the isolation of B. typhosus from the faeces of the typhoid carriers and the results are given below :—

1. A.E.C., age 82. Admitted November 12th, 1903. Detected as a typhoid carrier January 19th, 1928.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	40	30	10
Wilson & Blair ...	40	28	12

2. A.B., age 75. Admitted March 24th, 1896. Detected as a typhoid carrier October 16th, 1930.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	41	38	3
Wilson & Blair ...	41	35	6

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\* Dysentery isolation ward.

3. E.M.R., age 55. Admitted August 13th, 1925. Detected as a typhoid carrier October 23rd, 1930.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	41	25	16
Wilson & Blair ...	41	34	7

4. E.L., age 58. Admitted November 5th, 1915. Detected as a typhoid carrier December 2nd, 1930.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	41	32	9
Wilson & Blair ...	41	33	8

5. J.W., age 41. Admitted December 4th, 1917. Detected as a typhoid carrier September 17th, 1932.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	40	2	38
Wilson & Blair ...	40	17	23

6. E.D., age 53. Transferred from another Mental Hospital on October 6th, 1933. Detected as a typhoid carrier November 9th, 1933.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	15	1	14
Wilson & Blair ...	14	3	11

7. A.M.T., age 69. Admitted September 8th, 1927. Detected as a typhoid carrier October 19th, 1933.

Medium.	No. of specimens examined.	No. positive.	No. negative.
MacConkey ...	8	3	5
Wilson & Blair ...	8	6	2

A summary of these results shows that from 226 specimens of faeces from typhoid carriers, 131 gave positive results and 95 were negative when MacConkey's medium was employed. On the other hand, from 225 specimens of faeces from typhoid carriers 156 gave positive results and 69 were negative when Wilson and Blair's medium was employed.

Typhoid carriers Nos. 3, 5, 6 and 7, in particular, serve as useful illustrations of the value of Wilson and Blair's medium for the isolation of *B. typhosus*.

When using Wilson and Blair's medium it is important that only thin suspensions of faeces in distilled water be used as the inoculum. Heavy suspensions with consequent overcrowding of the plates is very apt to give unsatisfactory results.

#### 4. Routine Bacteriological Examination of Faeces from new Admissions.

In no instance has an organism of the dysentery group been isolated from specimens from new admissions.

*B. typhosus* was isolated from the faeces of a female patient, transferred from another mental hospital, and illustrates the importance of careful repeated bacteriological examinations of mental hospital transfers.

A brief history of typhoid carrier E.D. is given below :—

The patient had suffered from enteric fever in October, 1923. Frequent examinations of the faeces from 1925–1928 gave negative results. During 1929 the patient was given T.A.B. vaccine.

On October 5th, 1933, Widal's reaction was positive 1-25 *B. typhosus* and negative for *B. paratyphosus B.*, and the faeces were negative for *B. typhosus* and *B. dysenteriae*.

Transferred to this Hospital on October 6th, 1933.

November 9th, 1933, *B. typhosus* isolated on Wilson & Blair's medium. MacConkey's medium gave a negative result.

Repeated examinations have proved this patient to be an intermittent excretor of *B. typhosus*.



## IV.—FROM THE WEST RIDING MENTAL HOSPITAL, WADSLEY, SHEFFIELD.

*General Report on the Clinical and Pathological Investigations by the Medical Staff of the Institution.*—By DR. ARTHUR POOL, M.R.C.P., D.P.M., Medical Superintendent.

*Routine Laboratory Work.*

The work of the Laboratory is carried out by Dr. F. T. THORPE, assisted by Mr. W. H. B. VINCENT. The following is a summary of the work undertaken during the year 1933 :—

Urines : Routine, 1100 ; special—sugar estimations, 34. Faeces : occult blood, 4. Blood : total counts, 102 ; blood films, 162 ; urea estimations, 27 ; Van den Bergh's reaction, 3 ; citochol reaction of Sachs-Witebsky, 427 ; sedimentation rates, 50 ; freezing point determinations, 34. Bacteriological : faeces, 750 ; pus, 15 ; throat swabs, 64 ; sputum, 46 ; *acarus scabiei*, 2 ; preparation of Flexner vaccines, milk examinations, 2 ; water examinations, 1. Post-mortem examinations, 196 (96 per cent. of deaths). Histology : brains sectioned, 55 ; other organs, 35.

*Intestinal Infections.*—No cases of typhoid have occurred during the year, but there were 23 cases of acute bacillary dysentery with the main incidence in two large chronic wards (12 and 27). In 19 cases the causative organism was isolated from the faeces and the remainder gave diagnostic Widal tests. One male case was a recurrent dysentery from the previous year. The types of organisms found are as follows :—

	Males.	Females.
B. Dysenteriae Flexner W.Y. ...	12	8
B. Dysenteriae Sonne ... ..	—	3

There were 4 deaths, 2 from Flexner and 2 from Sonne infections. No dysentery carriers were detected among the new admissions, but 7 active carriers were found in the wards.

Prophylactic inoculations have been carried out on a large number of patients using an autogenous Flexner vaccine in two doses, 1,000 and 2,000 million bacilli at intervals of 10 days. Four patients developed dysentery in spite of recent inoculations, but in 3 the symptoms were very mild and undoubtedly modified. Widal tests following inoculations showed a moderate increase of agglutination titre, e.g., in one case 7 weeks after, rose to 60 R.T. with Flexner W, and to 25 R.T. with Flexner Y (Oxford Standards).

*Bacteriological Investigations.* (Dysentery Carriers).—When a case of acute dysentery occurs, the usual procedure is to place the ward in quarantine and closely to observe and examine all contacts, assisted by faeces cultures and Widal tests. Any further cases are thereby promptly isolated and the spread of infection reduced.

Mild or latent infections, however, are difficult to detect and may be missed unless the faeces of all contacts are immediately examined bacteriologically and re-examined at short intervals. Moreover chronic carriers are notoriously intermittent in the excretion of bacilli and any delay, such as may occur when dealing with a large ward of 100—150 patients, would greatly reduce the chances of success.

This was well demonstrated when at the beginning of May two cases occurred for the first time in a small ward of 23 boys. An immediate examination of all contacts revealed Flexner organisms in the faeces of 4 boys who had normal-looking stools, no symptoms and no history of previous dysentery.

A synopsis of laboratory tests on these patients is as follows :—

CASE 1. J.B., male, age 15 years. Faeces positive on May 2nd, 3rd, 12th, 19th and 26th, followed by weekly negative tests until positive, December 20th and 22nd ; negative on 27th. Widal in December was positive Flexner W.Y. (R.T. 25 and 10).



CASE 2. W.C., male, age 21 years. Faeces positive May 3rd; negative 13th and 19th; positive 29th; negative since. Widal in December positive Flexner W.Y. (R.T. 12.5 and 10).

CASE 3. L.B., male, age 18 years. Faeces positive May 8th; negative 12th; positive 19th and June 1st; negative 17th, 22nd and 29th; positive July 7th; negative since. Widal in December positive Flexner Y (R.T.5).

CASE 4. A.R., male, age 15 years. Faeces negative May 5th; positive May 13th; negative since. Widal in December positive Flexner V.W.Y. (R.T. 17, 62, 10).

It is highly probable therefore that cases 2, 3 and 4 would have been missed had they occurred in a large ward of 100 or more patients.

The advisability of regarding every case of dysentery as a continuous potential source of infection, in spite of negative faeces during convalescence, was borne out by the following cases :—

H.P., male, age 68, had acute dysentery on January 1st, 1932, his stools subsequently becoming negative. A chance examination on May 21st, 1933, 15 months later, showed Flexner organisms again. His Widal in December was positive to Flexner V, W, X, Y, Z (R.T. 17, 62, 25, 25, 25).

W.J., male, age 54, contracted dysentery in July, 1932, followed by negative faeces. An examination in May 1933 revealed Flexner organisms in a normal-looking stool.

Such cases as these are responsible for the endemicity of Institutional Dysentery and are quoted merely to emphasize the importance of constant laboratory investigations and the urgent need of some efficient method of treating chronic dysentery and the so-called healthy carrier.

#### *Histological Examinations (Alzheimer's Disease).*

During the year three autopsies were carried out on cases which clinically had been diagnosed as Alzheimer's disease and each was confirmed by microscopical examination of the cerebral cortex.

This interesting syndrome would appear to be less rare than is generally believed and all three patients presented a clear-cut clinical picture of profound dementia in the presenile period and no aetiological factors as far as could be ascertained.

In the terminal state they became bedridden and emaciated, developing bedsores and contractures of limbs. At the autopsy the brain in each case presented a marked diffuse atrophy of the cerebrum, with little or no sign of arterio-sclerosis. Sections of the frontal cortex showed numerous senile plaques and Alzheimer's tangles.

The following table shows the more important features :—

Sex and age of onset.	Early symptoms	Age on admission.	Restlessness.	Fits.	Age at death.	Weight of brain (whole).	Total duration.
Male age 51	Confusion Confabulation Headaches	53	Yes	Nil.	58	1140 g.	6½ years.
Male age 52	Confusion, felt "A crack in the head"	52½	No	One (terminal)	56	1050 g.	4 years.
Female 53	Absent-minded Forgetful	57	Yes	One at 58	60	1030 g.	7 years.

The above cases are typical examples of the presenile dementias although there were no marked focal manifestations, and histopathological examination revealed the characteristic changes in the cortex described by Alzheimer in 1906.



This nosological type evidently occurs more often and is better defined than other sub-groups found in the presenile dementias of which Pick's disease is probably the best example. It must be admitted, however, that a clinical differentiation cannot at present be made with any certainty and the classification of any case must ultimately depend upon histopathological examination.

*X-Ray Department.*—The work of this department continues to be carried out by Dr. Elisabeth Sykes :—

*X-Ray Department :—*

Males	...	...	...	...	...	40
Females	...	...	...	...	...	44
Staff	...	...	...	...	...	23
Total X-rayed	...	...	...	...	...	107
Number of Films	...	...	...	...	...	174

*Ultra-Violet Ray Department :—*

Cases treated	...	...	...	...	8
Number of attendances	...	...	...	...	115
Radiant Heat	...	...	...	...	1

*Dentist's Department.*—The Visiting Dentist, Mr. W. J. Law, L.D.S., attends to the work of this Department :—

					Number seen.	Extractions.	Various.
Males	...	...	...	...	213	342	56
Females	...	...	...	...	191	403	45
TOTAL					404	745	101

*Treatment of General Paralysis.*—The treatment of General Paralysis of the Insane by induced malaria has been continued. Twenty-six cases were inoculated during the year 1933, all of which were men. Seven men made remarkable improvement, and were discharged as "Recovered." The number of cases in the Hospital at the end of the year was 43 males and 5 females, a total of 48.

The total number treated since 1924 has been 275. Of these, 234 were men and 41 women. The number discharged as "Recovered" has been 82, and 13 have been sent out as improved into the care of their friends. The number of deaths which have occurred in treated cases has been 106.

*Anthropological Investigations.*—Dr. J. L. CLEGG.

Various Continental authorities, especially Kretschmer, maintain that there is a definite relationship between human form and human nature, and have endeavoured to prove their theory by making accurate anthropological investigations of the various psychological types found in the biogenic psychoses and also in normal individuals. Kretschmer describes four main body types, viz. : (1) Athletic ; (2) Asthenic (deficiency in body "thickness" combined with unlesened length) ; (3) Pyknic (the reverse of the previous type), and lastly ; (4) Dysplastic (types which show marked differences from the average and are closely allied to syndromes of known endocrine origin). He maintains that types 1, 2 and 4 are more commonly found amongst schizophrenic cases and that type 3 is more common amongst Manic Depressive cases.

To investigate these theories 100 cases of schizophrenia and 100 cases of Manic Depressive Insanity have been examined and certain head, face

and body measurements taken of each case, and an attempt is now being made to classify the results and to note any significant differences between the two groups.

To compare any results obtained with the measurements of a sample of the normal population, drawn from the same district as the patients, measurements are being taken of members of the Male Staff, who are willing to volunteer for the purpose, and of which 97 have already been completed.

*Publication.*

“Bodily Diseases in Mental Disorders.”—By Professor ARTHUR J. HALL, M.A., M.D., D.Sc., F.R.C.P., Visiting Physician to the Mental Hospital. (*British Medical Journal*, January 27th, 1934.)

*Report of Work.* By Dr. ELIZABETH COWPER EAVES, D.P.M., Hon. Neuro-Pathologist to the Mental Hospital, and MARGARET M. CROLL, M.Sc. (The Physiological Dept., University of Sheffield, and The South Yorkshire Mental Hospital, Sheffield.)

*A case of Posterior Inferior Cerebellar Thrombosis presenting unusual features.*

The following is a brief summary of a paper which has been written with Professor Arthur Hall on the above subject :—

(1) This case of posterior cerebellar thrombosis belonged, as regards distribution of sensory loss, to the less common type in which sensation is affected entirely on the side opposite to the lesion.

(2) The loss of tactile sensation as well as those of temperature and pain over the whole of the contra-lateral side, was in marked contrast to all previously recorded cases, in which the loss has been “dissociated” only. A partial thalamic syndrome was present on the affected side.

(3) The left posterior inferior cerebellar artery was smaller than usual, the left anterior inferior cerebellar artery was unusually large.

(4) An area of degeneration corresponding to the distribution of the left posterior inferior cerebellar artery was found consistent with an occlusion of that vessel three months before death. It was smaller than usual.

(5) No other appreciable area of degeneration was found in any part of the brain stem.

(6) The degeneration of the spino-thalamic tract could only be traced as far as the lower part of the Pons.

(7) It is suggested that in this man tactile impulses from the opposite side travelled through the medulla either with or closely adjacent to those of pain and temperature.

*Some observations on the Thalamic Syndrome in cases with a lesion in the brain stem.*

(1) In the case of posterior inferior cerebellar thrombosis, to which reference has been made, there was a partial thalamic syndrome. The optic thalamus on both sides was normal, and no other lesion was found except that in the medulla due to occlusion of the posterior inferior cerebellar artery. It is, therefore, suggested that the thalamic syndrome was due to the irritation of partially degenerated fibres in the medulla. We have observed other instances of a “thalamic” syndrome with a normal thalamus.

(2) A girl of 19 awoke one night with loss of use, and pain on the left side of the body. The pain continued on the left side for some weeks. She also felt cold on the left side as high as the shoulder. A tuberculoma of the pons in close proximity to the mesial fillet was found on the right side.



(3) In two cases of epidemic encephalitis we have noted a thalamic syndrome with no definite involvement of the thalamus.

*The possibility of regeneration of nerve cells in the adult brain.*

It is generally assumed that all the neurones are present at birth, and that no further division ever occurs in the higher vertebrates.

We have, however, found apparently dividing nerve cells in several instances in adult brains.

- (1) In the cerebral cortex in normal rabbits and cats.
- (2) General Paralysis of the Insane (? congenital). (Man aged 25).
- (3) Chronic epidemic encephalitis. (Two cases aged 52 and 53).
- (4) Myasthenia gravis. (Man aged 30).
- (5) Epileptic. (Aged 16).

It seems improbable that in all the cases the explanation is delayed development. It is suggested that in chronic epidemic encephalitis, and in the case of myasthenia gravis, the nerve cells have been stimulated to divide by the virus. This division of nerve cells is admittedly very rare. The above instances have been found in the course of long examination of numerous pathological human and normal animal brains.

*Epidemic Encephalitis.*

Seventeen brains have already been examined, and another is now being investigated from a patient with oculo-gyric crises who committed suicide.

Some attempt is being made to try to correlate the type of mental disorders and the degree of change in the central nervous system.

*Mental Out-Patient Clinics.*

At the *Royal Infirmary, Sheffield*, under Drs. A. G. Yates, Gillespie and Clegg, the work carried out during the year 1933 has been as follows :—

Number of new cases	...	...	...	...	...	...	147
Number of attendances of old cases	...	...	...	...	...	...	518
Classification of new cases :—							
Manic-Depressive	...	...	...	...	...	...	28
Dementia Praecox	...	...	...	...	...	...	6
Epilepsy	...	...	...	...	...	...	18
General Paralysis of Insane	...	...	...	...	...	...	5
Psychoneuroses	...	...	...	...	...	...	40
Various Psychoses	...	...	...	...	...	...	18
Involutional cases	...	...	...	...	...	...	32
							147

At the *Royal Hospital, Sheffield*, under Drs. E. F. Skinner, Mathieson and Elisabeth Sykes :—

Number of new cases	...	...	...	...	...	...	91
Number of attendances of old cases	...	...	...	...	...	...	1,666
Classification of new cases :—							
Manic-Depressive	...	...	...	...	...	...	33
Psychoneuroses	...	...	...	...	...	...	15
Epilepsy	...	...	...	...	...	...	13
Confusional Types	...	...	...	...	...	...	9
Dementia Praecox	...	...	...	...	...	...	7
General Paralysis of Insane	...	...	...	...	...	...	6
Paranoia	...	...	...	...	...	...	5
Senile Dementia	...	...	...	...	...	...	2
Delinquent child	...	...	...	...	...	...	1
							91

At the *Alma Road Hospital, Rotherham*, under Drs. G. E. Mould and F. T. Thorpe :—

Total number of attendances	...	...	...	...	...	1,013
Total number of patients	...	...	...	...	...	112
Number of new cases	...	...	...	...	...	55
Classification of new cases :—						
Neurasthenia	...	...	...	...	...	15
Psychoneuroses	...	...	...	...	...	5
Melancholia	...	...	...	...	...	10
Dementia praecox	...	...	...	...	...	5
Delusional	...	...	...	...	...	3
Dementia Paralytica	...	...	...	...	...	2
Brain Lesions	...	...	...	...	...	3
Arteriopathic	...	...	...	...	...	1
Epilepsy	...	...	...	...	...	4
Mental Deficiency	...	...	...	...	...	2
Post-encephalitis	...	...	...	...	...	3
Paralysis Agitans	...	...	...	...	...	2
						55

#### V.—FROM THE WEST RIDING MENTAL HOSPITAL, MENSTON, LEEDS.

*Report of Clinical and Pathological Investigations.*—Communicated by Dr. R. C. WALKER, Medical Superintendent.

##### A.—Routine Laboratory Work.

The following is a summary of the work carried out during the year.

*Histological.*—Pathological tissues, 9; blood films and differential counts, 41. *Bacteriological.*—Faeces for typhoid-dysentery group, 29; pathological material from the farm, 3; milk sample, 45; Meinicke reactions, 233; Widal reactions, 36; sputa, 55; throat swabs, 16. *Chemical.*—(additional to routine urine examinations). Quantitative urines (sugar, etc.), 82; blood sugar, 82; vinegar sample, 2. *Post-mortem examinations*, 104 (62 per cent. of the deaths).

##### B.—Pathological Investigations on the subject of Mental Disorder.

An investigation was carried out by Dr. D. Perk of the Hospital Staff, into the pathology and clinical histories of Cerebral Tumours. The results of the research will be published shortly. The tumours investigated comprise the following: (1) Spongioblastoma multiforme; (2) Glioma of the optic chiasma; (3) Fibro endothelioma; (4) Endothelioma; (5) Sarcoma; (6) Tuberculoma.

#### VI.—FROM THE WEST RIDING MENTAL HOSPITAL, STORTHESS HALL, KIRKBURTON.

A.—*Laboratory Work.*—By Dr. C. W. EWING, D.P.M., Medical Superintendent, and Mr. J. A. BURGESS, Laboratory Assistant.

During the year, 4,177 examinations were carried out in the Hospital Laboratory as follows :—

Blood: Meinicke K.R., 386; W.R., 386; agglutinations, 1,339; malarial films, 107; red and white counts, 6; differential counts, 3; blood sugars, 10; blood cultures, 3. C.S.F.: W.R., 53; colloidal gold reactions, 53; Ross Jones globulin tests, 53; cell counts, 53; Boltz acetic anhydride tests, 53. Dejecta: bacteriological examinations of faeces for enteric and dysentery, 703; urines, 420; urine estimations of glucose, 26; ketone tests, 54; throat swabs and pus specimens, 21; sputa, 18; milk, 12; water, 1; germicide, 1; pathological sections, 77; post-mortems, 143. Examinations of staff: agglutinations, throat swabs, faeces, test meals, blood cultures, urines, differential counts, 196.



The following is a summary of the blood reactions to the Wassermann and Meinicke tests on all admissions over a period of five years, 1929-33.

Admissions.				W.R.+	M.K.R.+
Males	...	1,072	...	148 (13.80 per cent.)	136 (12.68 per cent.)
Females	...	1,181	...	70 ( 5.92 per cent.)	69 ( 5.84 per cent.)
Total	...	2,253	...	218 ( 9.67 per cent.)	205 ( 9.09 per cent.)

*C.S.F.*—Of the 218 patients giving a positive Wassermann blood reaction out of our total of 2,253 admissions for the past five years, the c.s.f. was subjected to this test in 197 instances: 112 males (56.85 per cent.) and 45 females (22.84 per cent.) gave positive reactions.

*Enteric.*—Five cases of enteric fever occurred during the year. The source of infection was traced to the presence of two carriers, the organisms being isolated in culture.

*Dysentery.*—Six cases (2 males and 4 females) of dysentery occurred during the year; 5 were of the Flexner W:Y inagglutinable type and one of Flexner Y.

*B.—The Absence of the Peroneus Tertius in a Mongoloid Idiot.*—By Dr. NEIL MONTGOMERY, D.P.M., and Dr. DAVID K. BRUCE, D.P.M.

In his book, *The Mongol in Our Midst*, the late Dr. F. G. Crookshank, M.D., F.R.C.P., argued from certain homologies, that the Mongolian races differ from the others in the fact that they are descended from a simian stock in common with the Orang, whereas the Semitic races are probably Chimpanzoid in origin, and the Negroes Gorilloid. The white races of Europe, he considered, were a mingling and a further development of these races, so that it is possible to find, indigenous amongst us, individuals who show homologies with these original stocks.

Thus he explained, for example, the occurrence of "mongoloids" which are best known among the mentally defective, but who are also to be found among the normal population. It is noteworthy in this connection that many mongoloid imbeciles naturally and spontaneously take up a posture while sitting that reproduces line for line, the position which is always represented in the seated statues of Buddha—a posture which is well-nigh impossible for the ordinary European, but which is readily assumed by many racial Mongols, and, among anthropoid apes, by the Orang alone.

The peculiar aptitude for this posture, in the Orang, Dr. Crookshank associated with the normal absence of the *ligamentum teres*, and of the *peroneus tertius* muscle. This last is commonly regarded by anatomists as an exclusively human attribute, not to be found in the anthropoids, but it has lately been reported as being occasionally present in the gorilla. On the other hand, the *peroneus tertius* is not infrequently absent in the Chinese cadaver, and is sometimes replaced by a *peroneus parvus*, a muscle hitherto considered peculiar to the Orang.

It was therefore with considerable interest that in the course of post-mortem examination of one of our mongoloid idiots, we found the *peroneus tertius* absent on both sides, and the *ligamentum teres*, on each side, unusually thin and poorly developed. The patient, M.B., was a typical mongol, the facies was classical, and she readily assumed the "Buddha" position while sitting. She was admitted, at the age of 41, to the Storthes Hall Mental Hospital in December, 1927, and died there on January 19th, 1933.

*C.—Paranoid Mentalities.*—By Dr. NEIL MONTGOMERY, D.P.M.

The curious similarity between the thought of the insane person and that of the primitive mind has frequently been commented upon, but the peculiarity of the patient's reaction to his own thought has not, perhaps, attracted the attention it merits.



Let us therefore first glance at the chief characteristics of primitive thought, and then illustrate the parallel with insane thought by quoting a few examples from actual cases. We may then see how the patient reacts to his own thought-processes.

According to M. Lucien Lévy-Brühl (*The "Soul" of the Primitive*), the basic fact of primitive mentality is the inability of the savage to draw any clear distinction between his own self and the external world. Compared with his, our idea of our own individuality has undergone a shrinkage, and is much more closely confined within the bounds of our own person.

For the primitive, his individuality extends to all the external objects which have "participated" in him, in any way. Thus his likeness or reflection, his excreta, his hair, the traps he has set, or the remnants of food he has eaten, are, to his mind, indistinguishable from himself. Consequently, all such things, which are called by Lévy-Brühl his "appurtenances," may serve his enemies as a means of doing him harm. If they are "wounded," by the law of "participation" the wound will affect him, since they *are* him.

By means of this participation, the primitive is far more closely bound to his fellows, to external objects, and finally, to the whole universe, than is any civilised person. To find anything emotionally similar in civilised races, one must examine the mentality of normal schoolchildren. This has been done in Geneva by Professor Jean Piaget, who finds the same attitude amongst his children, as does Lévy-Brühl among his primitives.

From the age of 6 to 12, it would seem, the normal child is as hazy as the savage as to the limits of his own personality. He too is held by participational ties, and as naturally accepts the idea of magical action as does the savage who fears that he has been bewitched by means of his appurtenances. It is only after the age of 11 or 12 that the child outgrows these ideas.

(Piaget : *The Child's Conception of the World.*)

Among the insane, especially among paranoids and melancholics, similar ideas may be found. Thus, one of my patients, L.G., complained that a certain doctor was torturing her by means of a "television machine." When he placed a photograph of the patient under the machine, he could afflict her with pains in any part of her body, merely by touching the corresponding part of the photograph. This is one of the commonest forms of bewitching by appurtenances.

Another patient, S.S., was afraid of mentioning any member of the staff by name, because "names are great influences" and "it is by the forcing of names that evil comes." Again this belief that the name is a vital appurtenance, of great power in magic, is widespread in primitive communities.

But one of the most arresting parallels I have met with, was provided by my patient L.A., who accused me of allowing my afterbirth to breath upon her, thus causing her to give birth to "Spirit-children." She informed me that "Man has two bodies, a material body and a spirit-body," and that the latter is the afterbirth.

Frazer, in *The Golden Bough*, quotes many examples of this belief among savages, and Prof. Elliot Smith in *Human History* states that the idea of a National Flag originates from the ancient Egyptian custom of having the king's placenta borne on a pole in front of the army, since this object was the king's "secret helper," his "other self."

The foregoing patients are all cases of dementia paranoides, but similar trends are to be found amongst melancholics. Thus my patient M.H. was in the depths of despair because of her sin, which consisted in the introduction of some of her menstrual blood into the tea of a young man, as a "love-charm."

That this belief in the efficacy of magic is closely allied to participation may be seen by a study of those patients who claim magical powers of



healing. Thus one lady, E.M., claimed that she could quicken the dead when she was thrown into a trance. During that time, every bruise, scar and pimple on the dead person appeared on her person, thus showing the complete participation which existed in her mind between herself and the dead person.

This participation also frequently extends to include the whole world, as was shown by the remark of this patient E.M., that if her virginity were "broken" it would cause an earthquake, or some equally dreadful happening, while the patient L.A. declares that if she is murdered an "ecclesiastical earthquake" will occur, and that the fate of both Great Britain and Germany are bound up with hers.

If, then, it be granted that paranoidal mentality is basically primitive mentality, we can interpret the clinical picture of the condition, if we also assume that the patient reacts against the primitive participations in her mind. She feels herself tethered by the participational tie and consequently interprets it as a hostile influence. But she reacts emotionally, and not logically, and therefore the participational bond is not broken. On the contrary it holds, and as she drags away from it, it brings about a sort of "extroversion" in her mentality. (The word "extroversion" is here used rather in the obstetrical than in the psychological sense). In any case, the patient is, so to speak, mentally turned inside out, so that many of her mental processes appear to her to be external and objective realities, and these are imbued with a feeling of hostility. Where this process affects the plane of concepts only, we have the picture of *delusions* of persecution, but if the plane of percepts is also involved then *hallucinations* of persecution will be added to the delusions.

In the development of such a case, however, the time must ultimately come when the patient's mind is almost emptied of its contents, so that the patient will feel that she has been robbed of all her attributes. At this point, in order to preserve herself, she must reverse the process, and reabsorb the products of "extroversion." The participational tie, however, still remains intact, and therefore the incoming tide sweeps with it all the objects to which the patient is mentally attached. Ultimately this will involve the whole world order, so that the patient becomes the whole Universe and all that it contains. All is a part of her personality. In a word, she becomes God Almighty.

This, then, is the explanation of the amazingly regular progress, which such patients show from the persecutory phase to the stage of megalomania.

Here is an example of almost complete megalomania in an old paranoid dement M.A.A. She claims that she is God Almighty Everlasting, and that this title was on her birth certificate. Her father was the "jockey-pig" and a very clever animal. He found her on a walnut tree in Eden, but she was really born in a manger like Christ, in fact she is a Christ. There are several Gods of Heaven, but she is the highest of them. She forms worlds, and trees and buildings by "creation." She has created this hospital, and she has made it of precious stones which are all alive and conscious. In each of the pictures of her ward she occupies a principal place. All these figures are alive, and she is all of them, and the Lord God Almighty Everlasting into the bargain.

Thus we see how the patient's individuality is expanded to infinity by megalomania. It is the opposite condition from the "shut-in personality" of the persecutory phase, for which it is, indeed, the psychotherapeutic antidote.

#### Conclusion.

If our conclusions are correct, they may even suggest some hopeful lines of treatment in paranoia. The condition is universally recognized as being a chronic incurable psychosis, and there can be no doubt that this is true of paranoia as we see it in mental hospitals. The only question that can arise is as to whether it is also an unpreventable psychosis.



We have seen that it arises in the attempt on the patient's part to overcome the participational ties holding him, or in other words, to out-grow his childish mentality. The ordinary child is also confronted with the same problem and solves it successfully. How then does his method of dealing with it differ from the procedure adopted by the paranoid ?

Piaget has shown us that the child begins, about the age of 7 or 8, to distinguish between the sign and the thing signified, and between "internal" and "external" about 9 or 10, while it is not until after the age of 11 that he really begins to understand that thought is really subjective and immaterial. And Piaget concludes that the chief psychological factors at work to bring about this change are social ones. In fact the change takes place *pari passu* with, and on account of, the child's growing realization of his own thought, and this is brought to his notice by social contacts and the practice of discussion with others, which ends by forcing him to realise the subjectivity of his own point of view, and therefore of thought in general.

Now the paranoid, by the very nature of his hostile reaction, shuts himself from the health-giving influence of these social factors. He withdraws himself as far as possible from contacts with his fellows and he resents them fiercely. The phrase "shut-in personality" has been coined expressly to describe this condition. We realise that this "shutting in" which occurs in the superficial layers of the personality, is but the patient's attempt to compensate for the too great diffuseness which exists in the deeper layers ; that it is, in fact, an attempt at psychotherapy. But it is a misguided attempt, which most undeniably fails in its object.

By refusing the ventilating effects of social contacts, the patient consolidates his "ipsissimosity." The vicious circle is complete and rapidly becomes unbreakable ; the psychosis is so firmly rooted that all treatment is unavailing.

Now it would appear that the adoption of this aloof, asocial attitude of suspicion occurs very early. One can usually obtain evidence from the relatives of a paranoid, that even at school he was remarkable for his reserve and suspicion. It is at this period, if at any, that there may be a chance of breaking up the vicious circle before it has had time to root itself firmly.

Psychologists such as Piaget and his co-workers who have carefully studied the various ages at which the changes in outlook usually occur in normal children, should be in a more favourable position than anyone else to pick out those children who show an early paranoid reaction. Upon these, all the skill and tact of educational experts, psychological and pedagogical alike, should be concentrated to break up the incipient vicious circle and to lead the child into healthy relations with his fellows. Were this done, it is not inconceivable that a number of children might be saved from the tragic fate of the paranoid, who, with his incurable mental disorder, and yet with his clear realization of his ignominy as a certified patient, presents one of the saddest pictures to be seen in our mental hospitals.

## VII.—FROM THE LANCASHIRE COUNTY MENTAL HOSPITAL, RAINHILL.

*Report of Clinical and Pathological Investigations.*—Communicated by  
Dr. E. F. REEVE, Medical Superintendent.

### A.—Laboratory Work.

The following laboratory work was carried out :—

Routine examination of urine, 585 ; sputa, 55 ; throat swabs, 12 ; vomit for occult blood, etc., 3 ; faeces for T.B., 20 ; material from lesions, 3 ; pleura fluids, 4 ; blood sugars, 3 ; films for material parasites, 25 ; Van den Bergh, 4. Complete examination of c.s.f., the sigma, cells, colloidal gold, Nonne-Apelt reaction, 59 ; blood sigma



reaction, 481; vaccines, 6; blood cultures, 1. Margarine analysis, 4. Bacteriological and microscopical examinations of faeces for dysentery, 316; bacteriological examination of milk, 2; bacteriological examination of water supply, no organisms of the colon group present; total blood counts, 25. Photographs were taken of all new cases admitted and of all patients discharged, during the year. Post-mortems (56 per cent. of deaths), 122; from which much material has been collected, both for museum specimens and microscopic-sections with special interest in organs and endocrines in cases of acute dementia praecox, with a view to a further investigation into the histopathology of this condition.

The laboratory work has also been carried out, as in previous years, for the local Public Assistance Institution, Whiston. Blood sigma reactions, 31; Widal, 1; complete with bacteriological examinations of c.s.f., 10; sputa, 39; material from lesions, 6; X-ray examinations, 10.

*Dysentery.*—There were 32 cases (two of which were members of the staff), in which *B. dysenteriae* (Y strain) was isolated from the stools. Two cases of amoebic dysentery in which ent-hystolytical was found and one re-occurring during the year.

*Cerebro-Spinal Fluids.*—Of the 59 c.s.f. examined, 56 were from cases admitted during 1933, 37 of which proved to be cases of G.P.I. 16 gave complete negative results and 3 gave readings consistent with some organic nervous disease.

*X-Ray Department.*—During the year, 279 patients, for whom 462 successful radiographs were taken. In no case where injury was suspected has X-ray diagnosis been omitted.

B.—*A small series of Intracranial Tumours.*—By Dr. C. B. BAMFORD, D.P.M., and Mr. H. BEAN, Head Laboratory Assistant.

It is generally recognized that the incidence of intracranial tumour in the insane is comparatively small, and the clinical and pathological records at Rainhill Mental Hospital furnish but few instances of this condition over an extensive period of years. There are few conditions of greater and wider medical interest than intracranial tumours, and this is, in a large measure, due to the frequent obscurity of the clinical symptoms and the consequent difficulty of accurate diagnosis and localization. Moreover, from the pathological point of view, the determination of the precise nature of the tumour as to derivation and classification offers additional interest. By such criteria it is claimed that the five cases of intracranial tumours which are described fully below are of considerable clinical and pathological interest.

Before proceeding to a description of the cases individually it might be mentioned that in only two of the cases (cases 1 and 2), was a tumour suspected on clinical grounds, in two other cases (2 and 4) the clinical symptoms were too vague to make a satisfactory diagnosis before death, whilst in the last (5) the presence of a tumour was never considered at all during life and was only discovered incidentally at the post-mortem examination. Further, the widely varying characters and situations of the tumours in this series are deserving of special mention.

CASE 1. (*Case of uncommon Plexiform Angioma of Pons Crura*). A.V. Female admitted to Rainhill Mental Hospital, October 29th, 1925, age 37, as a case of melancholia. No family history obtained. On admission, she was dull, stupid, at times emotional and lachrymose. She was very confused and her memory greatly impaired. Physically she was in very fair condition, but in the nervous system, her speech was slurring, and she was unable to repeat test phrases. The knee jerks were brisk and her pupils equal with a sluggish light reflex and her gait unsteady. She was at this time officially diagnosed as a case of general paralysis of the insane. There was unfortunately very little information regarding her history prior to admission to this hospital, but it is believed that she had had mental symptoms for several years.

It was not until two months after admission that she was lumbar punctured. The sigma reaction in blood and c.s.f. was negative, there was no increase of globulin or cells and Lange's colloidal gold tests showed only very slight change in the middle tubes. This negated the diagnosis of G.P.



She ran a slow gradual course of mental deterioration, and occasionally she exhibited symptoms of a neurological lesion, the precise nature of which could not be determined. Her physical health remained fair for a considerable time, and she was able to be up and about, although it was observed that her gait was clumsy. Her speech was often halting and slurring, but, at times, appeared for a while to be greatly improved. Her tongue was tremulous and her pupils reacted very sluggishly. Mentally, her symptoms pointed to a progressive degeneration. She was always forgetful and confused and her emotions were shallow and unstable—whilst her habits became generally unsatisfactory.

Later on her gait became so ataxic that it was deemed safer for her to be kept in bed, and for the last six years of her life she was nursed in bed. In addition, about two years after admission, her vision began to fail rapidly, and in a few months she became completely blind, due to a secondary optic atrophy. At this stage her neurological picture was such as to suggest the existence of an intracranial tumour. She had lost 18 lbs. in weight since admission, there was considerable tremor of face, tongue and hands; the slurring speech had become more pronounced, and a right external strabismus had developed. The pupils were always equal, but showed no light reflex, whilst her gait was markedly ataxic.

There was little further change in these physical signs beyond the subsequent appearance of a bilateral divergent squint indicative of involvement of both 3rd cranial nerves. The clinical picture in the course of five years slowly progressed to one of complete physical and mental enfeeblement and she subsequently died on March 15th, 1933, with a terminal hypostatic pneumonia following a brisk attack of facial erysipelas.

As far as can be ascertained, she never complained of any headache and there is no history of vomiting.

At the autopsy, a very unusual and interesting condition of the vessels running round the upper pons and crura cerebri was noted. Whilst the arteries constituting the circle of Willis appeared normal, there was an enormous dilation and thrombosis of the veins in this neighbourhood causing a constriction around the upper pons and crura. From this vascular mass numerous twig-like tributaries branched in all directions entwining and penetrating the substance of the pons. Although it is impossible to define the precise limits of this dilation, an approximate idea of its extent and ramifications can be gauged from the fact that on dividing the brain from the pons, the exposed section showed that the normal substance of the pons had been replaced to an incredible degree by a vascular tumour. In fact the only part of the pons that appeared at all normal to the naked eye was a narrow strip of tegmentum. The pressure of the swollen veins on the interpeduncular space had produced an atrophy and erosion of the optic chiasma, and a complete disappearance of the corpora mammillaria.

Microscopically the tumour consisted of a venous plexus. Sections were stained specifically for elastic tissue to ascertain whether arterial vessels participated in this tumour. The absence of any elastic lamina in the walls of the vessels established the tumour as one of exclusive venous origin.

A more adequate impression of the nature, situation and extent of this interesting vascular tumour can be given by photographs, both macro- and microscopical, and it is regretted that for the purpose of this paper we are unable to include them.

**CASE 2.** (*Case of Malignant Pituitary*). E.D., aged 59. Admitted March 4th, 1931, as a case of melancholia of recent origin. The history revealed that she had complained of progressively failing eyesight—for which symptom she was admitted to the Public Assistance Hospital where, subsequently, mental symptoms developed, necessitating her removal to Rainhill.

It was observed that she had prominent facial features without, however, exhibiting any marked neurological signs other than a sluggish light reflex in her pupils. Mentally, she was restless, agitated and depressed, resistive to her management and faulty in her habits. These mental symptoms varied in intensity from day to day, and in addition, there were times when she became very confused and had hallucinations of sight. In her lucid moments, she complained of severe headaches. About a month after admission, she suddenly passed into an unconscious state which appeared to deepen. She was lumbar punctured a few hours later, the fluid being under considerable pressure. She died 48 hours later without regaining consciousness.

The result of the c.s.f. examination was: fluid clear, under pressure. No increase in globulin or cells. Colloidal gold reaction, no change. The only departure from normal was a slight decrease in the chloride content.

The post-mortem findings were as follows:—

The bones of the skull were definitely thickened; the frontal thickness was 9 mm. (cf. 6 mm. normal), the occipital was 8 mm. (cf. 6 mm. average). The density of the



bones was increased and the skull internally as well as the meninges showed marked congestion.

On turning back the dura mater the brain appeared congested, and tense with flattening of the gyri. When the frontal lobes were raised, the optic nerves were seen to be stretched and flattened over a large tumour. After the brain was taken out, the tumour was left complete, and was obviously a tumour of the Pituitary body. It had no connection with the brain, on the surface of which however, there was a considerable depression caused by the upward growth and pressure of the tumour. The tumour was about 2 in. in diameter at the maximum, irregular in shape with numerous small eminences, but with a smooth surface. The sella turcica was greatly enlarged and there was an abnormal long depression on the left side of the cavity separated from the main cavity by a bony septum.

Microscopically, the tumour consisted of masses of loose epithelial type of cells, mostly chromophobe. Many contained two or more nuclei, whilst some were seen to be in the process of dividing. There were numerous embryonic blood vessels and large haemorrhages with some blood pigments present. The pathological diagnosis of malignant tumour was confirmed by Prof. Dible and Dr. Davie of the University of Liverpool.

In this case the presence of an intracranial tumour was strongly suspected during life and the cause of death was certified as cerebral tumour. The presence of acromegalic features pointed to a pituitary origin.

CASE 3. (*A case of Cystic Pituitary Tumour*). C.L., aged 57. Admitted to Rainhill Mental Hospital, September 16th, 1932 as a case of progressive dementia. The contraction of both knees suggested that she had been bedridden for a long period. She was in feeble health and condition, and exhibited advanced cardio-vascular degeneration. An inequality of the pupils is the only recorded neurological abnormality. Mentally, she was very reduced, very childish, completely confused and incapable of giving any account of herself. She deteriorated rapidly physically and mentally and four months after admission, she died following a circulatory collapse. She was certified as dying from myocarditis.

At the post-mortem examination, there was unmistakable evidence of increased intracranial pressure as soon as the calvarium and dura mater were opened. On raising the frontal lobes, an extensive haemorrhage was apparent, due, as proved on further investigations, to the rupture of a large cystic pituitary tumour. There was marked absorption of the bones forming the sella turcica, leaving a cavity (1½ in. deep by 1¼ in. wide by 1½ in. length, front front to back), which was filled with soft pulpy tumour substance. The brain viewed inferiorly, showed extensive pressure atrophy of the optic nerves, especially the left, the optic chiasma, tuber cinereum, corpora mammillaria and left pedunculum cerebri. Further there was atrophy with commencing softening of the left hippocampal gyrus.

Microscopical examination showed the tumour to be an adenoma of indifferent cell type—which accounts for the absence of acromegalic features. The cystic changes in the tumour were evidently secondary to necrosis and haemorrhages.

In this case there was nothing during life to suspect the presence of a tumour. It is difficult to believe that such a large mass did not interfere with her vision, or give rise to headaches, but she was much too demented to give expression to any subjective symptoms.

CASE 4. (*A case of Tuberculoma of Crura Cerebri*). A.R., aged 39. Had been a patient for 23 years, suffering from delusional insanity. Although at times very noisy and agitated by his persecutory ideas, he was in good health generally, and occupied himself industriously. For many years, he had been troubled with a very stubborn skin lesion affecting the dorsum of his right hand. This rash never completely healed, but remained localized. Though not by any means typical, it was considered to be a tuberculide condition. Later, it was the seat of considerable secondary infection, and at the beginning of his fatal illness in April, 1932, the hand became very much swollen and discharged through a number of small sinuses. At times, he complained of severe head pains—often around the orbit, and he experienced difficulty in moving his eyes laterally and, further, said that he could scarcely see. The pyrexia was of a low irregular type, but towards the end, the temperature rose gradually, and just before death attained 104·4°. A few days before death, he vomited on one occasion, and then became very drowsy. In the early part of the illness, septicaemia was suspected, but repeated blood cultures remained sterile. Death occurred within a month of the commencement of the illness. It was left to the post-mortem examination to reveal the true nature of the fatal illness. Little if any definite pathology was found in the viscera. There was some degree of hypostatic congestion of the lungs—obviously a terminal condition. The inferior surface of the



brain showed numerous minute discrete tubercles, especially marked over the tuber cinereum, optic chiasma, pedunculi cerebri and temporal poles. The surface of the tuber cinereum was broken by a crater-like depression of irregular shape, the greatest depth being 8 mm. On dividing the cerebral hemispheres, an extensive lesion was disclosed, involving both cerebral peduncles. Microscopical examination of sections taken from various parts of the lesion showed a typical acute tuberculous process, and sections stained by Zheil Neilsen showed masses of tubercle bacilli.

CASE 5. (*Unsuspected case of Psammoma*). J.M. A case of ordinary epilepsy, had been a patient of this hospital since 1919. His fits began at the age of 42 years, and continued on an average of 8 fits a month until his death at the age of 60. Mentally he presented the usual features of the chronic epileptic and undoubtedly became progressively feeble-minded. Physically, he was a man of considerable physique, and enjoyed good health generally, during his residence in the institution. There was never any evidence of any lesion of the C.N.S. and nothing to suspect the existence of any intracranial mischief during life.

At the post-mortem examination, there was found hypostatic congestion and oedema of the lungs together with dilation of the right ventricle and of the aortic arch.

On removing the brain, a large irregular shaped tumour was found occupying the whole of the left temporal fossa firmly adherent to, and apparently arising from the dura mater. The rough dimensions of the tumour were 2 in. by 2 in. by 1 in. in depth, but in addition, there was a further irregular elongation of the tumour penetrating into the brain substance of the temporal lobe. It was impossible to enucleate the tumour because of its infiltration of the brain. The adjacent bony structure of the temporal fossa, when stripped of the dura, was somewhat roughened, but there was no evidence of any invasion of the bone by the tumour. The tumour was clearly of meningeal origin.

On microscopical section, the appearances were those of a psammomatous meningioma.

#### C.—*An analytical survey of a series of cases of Insanity with Pregnancy.*—

By Dr. C. B. BAMFORD, D.P.M.

Gestational insanity of such severity to require institutional treatment is a comparatively rare condition. In fifty years slightly less than a hundred cases (97) have been treated in this hospital. A disease with an average incidence of two cases per year in a large mental hospital cannot be regarded as a common condition.

The recovery rate has worked out at 35 per cent., that is, approximately, one woman in every three has made a full recovery from her mental illness.

In 60 per cent. of cases there was found to be some associated mental disability or weakness, either already in existence before pregnancy or unmasked by the incidence of pregnancy.

Insanity in pregnancy is the least common of all the forms of insanity connected with reproduction, and it offers the poorest prognosis.

In the early stages of the disease, the prognosis is a matter of considerable difficulty and should be very guarded. Some assistance and guidance in arriving at a prognosis can be had from a careful study of the aetiology and symptomatology.

The average duration of the recovered case was about 6 months in all, the mental symptoms beginning about the seventh month of pregnancy, and continuing until the third and fourth month after confinement. The prolongation of the mental symptoms after the sixth month renders the outlook highly unfavourable.

On aetiological and symptomatological grounds there is little warrant for styling these cases Confusional Insanity, a title which has given rise to certain misconceptions. The question of adopting a more appropriate and descriptive title is worthy of some consideration.

It cannot be said that there was any outstanding and characteristic factor in the aetiology common to all cases. As in all mental disorder heredity played some part, but to what precise extent it is difficult to assess. As a causal factor, illegitimacy was not found to be unduly prominent; elderly multiparous women figured largely in this series.



The obstetrical difficulties and abnormalities encountered in these cases were practically negligible. Labour was very easy and often rapid, and the puerperium free from sepsis. (*Journal of Mental Science*, January, 1934.)

D.—*The Treatment of Insanity following Epidemic Encephalitis with : (1) Atropine : and (2) Stramonium.*—By DR. JOSHUA CARSE, D.P.M.

### 1. *Atropine.*

Prompted by Dr. A. E. Evans' report in the *Journal of Mental Science* January, 1933, on the special intensive atropine treatment employed by Dr. Carl Roemer for patients showing the sequelae of epidemic encephalitis, thirteen male patients of this type were given a similar course of treatment. These patients were typical examples of insanity following epidemic encephalitis: they were all advanced cases and in several of them, the physical disabilities consequent on the original attack of encephalitis were so severe that they were unable to attend to their simplest needs.

The method of giving the atropine was similar to that used by Dr. Roemer except that the drug was given orally as an aqueous solution. During the first day,  $\frac{1}{4}$  mgrm (gr. 1/200) atropine sulphate was given three times. The morning dose was increased to  $\frac{1}{2}$  mgrm. on the second day, the other doses remaining at  $\frac{1}{4}$  mgrm. On the third day, the afternoon as well as the morning dose was increased to  $\frac{1}{2}$  mgrm. Continuing to increase in this manner, each of the three doses was 1 mgrm. on the tenth day. Owing to the tolerance which these patients have for atropine, very large doses of this drug were eventually reached before serious signs of over-dosage appeared.

There were, however, some unavoidable discomforts associated with this form of treatment which, at times, made it a matter of great difficulty to persuade the patients to continue with the course. Excessive dryness of the mouth caused a lot of complaint: this was only partially relieved by having a constant supply of fluids for them to drink. Paralysis of accommodation made reading impossible. Nocturnal restlessness and noisiness was also a prominent feature during the treatment.

The course continued satisfactorily until the patients were receiving 8 mgrms. atropine t.d.s., when signs of excess of this drug became serious. The dryness of the mouth and throat became intense and swallowing was a matter of great difficulty. Vertigo was a constant symptom. They were all greatly confused, restless and excited. Their faces were flushed but there was no rise of temperature nor did any of them show signs of collapse. In a few hours, these symptoms became less pronounced and next day the patients appeared much as usual although very nervous and apprehensive. No atropine was given during the next 12 hours, and then the dose was reduced to 6 mgrms. t.d.s., and kept at this level for three days. The amount was then gradually increased as before and was raised eventually to 10 mgrms. t.d.s. At this stage, it was thought inadvisable to give greater quantities of atropine, the risk of serious complications arising being too great. After giving this quantity for one week, each dose was gradually reduced and the course terminated. Treatment commenced on June 26th, 1933 and ended on November 4th, 1933.

One patient (CASE 12) refused to continue with the treatment at an early stage. He is, however, resistive to any form of attention, and very difficult to manage.

CASE 13.—On August 12th, 1933, this patient, like the others, first showed signs of atropine over dosage. His symptoms were not severe, and on resuming the smaller dosage (6 mgrms. t.d.s.) he appeared to be in his usual state of health. He had an attack of vomiting on August 20th, 1933. No dizziness or intense dryness of the mouth: his face was pale—not flushed. Temperature normal. Atropine was further reduced to 5 mgrms.



t.d.s., as a precautionary measure. August 21st, 1933, patient was much improved: no sickness or vomiting. On August 25th, 1933, he commenced vomiting again. Temperature 104·8; pulse 118; respiration 31. General condition one of collapse. Stimulants were administered. Atropine reduced to 2 mgrms. t.d.s. Later in the day he developed bulbar paralysis and on August 26th, 1933, after two generalised convulsions, he died. A post-mortem examination was made, but no evidence was found indicating that the special treatment had had any bearing on the death of the patient.

The condition of the remaining eleven patients a short period after the treatment had finished, showed no change from their previous state. Whilst the treatment was in progress, however, and particularly during that period when they were receiving large doses of atropine, there was definite improvement. But this improvement appeared to be confined definitely to their physical condition. The rigidity which had been common to all these patients was much relieved, allowing greater freedom of movement. Co-ordination was more refined and actions which had previously been impossible, were now performed with comparative ease and steadiness. There was also some improvement in attitude and gait. Their condition was, of course, still far from normal, for these patients still showed most of the classical signs of Parkinsonism. But their former condition had been so very advanced that the improvement which had developed during treatment made their present milder condition a striking contrast.

This physical improvement probably explains the better behaviour which was noticeable whilst they were undergoing treatment. Whereas previously most of these patients were troublesome and mischievous, and needing every attention and ease, they were now more easily managed and more amenable to ward discipline. Being able to move about freely, and to perform actions which had previously been beyond their powers, they began to take a more active interest in their surroundings, and, in some cases, to occupy themselves doing simple, but useful ward work.

Their actual mental condition, however, showed no improvement. There was still a serious lack of moral senses and self-control, and they still gave way to sudden impulsive outbursts. In conversation they were childish and simple, and they displayed a considerable weakening of their mental powers. True insight into their condition was conspicuously absent. Emotionally, they were very unstable, and could easily be made either to laugh or cry.

As already mentioned, the improvement only lasted whilst the treatment was actually in progress: a few days after its termination every one of these patients had relapsed into his former condition.

## 2. *Stramonium.*

On November 16th, 1933, treatment of the same group of patients was recommenced. On this occasion Stramonium was used, for, although the ultimate action of Stramonium is almost identical with that of Atropine, in practice it is found that the mouth is not so dry, nor is vision interfered with to the same extent even when using large doses. The patients themselves seem to prefer Stramonium and there has not been the same difficulty in getting them to continue with the treatment, which is still in progress, and so far only one patient (CASE 8) has objected to this drug, and he has ceased entirely to co-operate.

A special liquid extract of Stramonium prepared by Messrs Parke Davis is being used with every satisfaction. It is a concentrated solution one minim of which is equivalent to Tinct. Stramonium (B.P.) mX, so the volume of liquid used can be kept conveniently low. The method employed in giving this drug is much the same as that used with Atropine. The initial dose was Liq. Ext. Stramonium (P.D.) mii t.d.s. and each daily increase has consisted of one minim. The course continued until the patients were receiving mV t.d.s., when no further increase was allowed for



one week. The object of this "stationary period" was to allow the tolerance for the drug which the patients had already formed to become well established. When the dose reached mX t.d.s. another stationary period was introduced for one week. The same procedure was adopted when the patients were receiving mXIV t.d.s. At the moment (January 30th, 1934) they are receiving mXVI t.d.s. (equivalent to Tinct. Stram. B.P. m160 t.d.s.), and so far no untoward symptoms have developed at any time.

It is not possible to give a final opinion seeing that the patients are still undergoing treatment, but already six of the ten patients who have persevered with the course show an encouraging improvement. Details of their past and present condition are appended for comparison.

As before, however, the most noticeable changes have occurred in their physical condition, and in particular, it is the release of the muscular hypertonia which would appear to be the chief factor in this improvement. Greater freedom and control of movements have resulted in the patients being able to live a more active and varied life, and this in turn has made them more contented and better behaved. But one must mention again that, so far as treatment has gone, this improvement is only relative, for these patients still bear the unmistakable stigmata of epidemic encephalitis.

Regarding their mental condition, it is difficult to imagine their ever showing great improvement and recovery would seem to be an extremely remote possibility. In most of these cases, the original attack of epidemic encephalitis occurred at an early age (about 13 years) and the resulting lesion has seriously interfered with, if not completely arrested, the mental development which is so progressive at this period. Their condition, therefore is really one of amentia, the amount of defect varying from patient to patient, and depending on the stage of development they had attained before their attack of epidemic encephalitis and on the subsequent damage produced by that disease.

Finally, it would appear that to get the desired effect, a prolonged, if not permanent, course of treatment is essential. As has already been shown, immediately the drug has been withdrawn the muscular hypertonia and rigidity return, and the patient sinks back into his previous state.

#### *Details of Patients receiving Treatment.*

CASE 1. K.C., age 20. Epidemic encephalitis at 10 years of age. Admission to Rainhill Mental Hospital, December 3rd, 1927.

*Previous Condition.*—Well marked sequelae. Mask-like face: flexed attitude: general muscular hypertonia with slow clumsy movements. Sialorrhoea. Gait—fair. Tremors, slight. Emotionally he was dull and apathetic with outbursts of excitement. Liable to impulsive and violent action. Lacking in moral sense—untruthful and a sexual pervert.

*Present Condition.*—Improved. Movements are freer, and patient is more active. His face is more expressive and his speech is clearer. No sialorrhoea. No oculogyral spasms. Behaviour—fair, but unreliable. Still very dull and apathetic. He needs constant supervision.

CASE 2. R.S.F., age 26. Epidemic encephalitis at 13 years. Admitted to Rainhill Mental Hospital, February 29th, 1924.

*Previous Condition.*—Severely handicapped by his post-encephalitic condition. Face and attitude—typical. Muscular hypertonia—extreme. Unable to lower his heels to the ground owing to the tonic contraction of the calf muscles. Unable to stand or walk: can run. Unable either to dress or feed himself. Tremors of arms—constant. Speech slurred and barely audible. Usually dull and apathetic. Periods of restlessness and excitement. Moral sense absent—untruthful, dishonest, vicious and sexually perverted.

*Present Condition.*—Improved. Muscular hypertonia much less. Calf muscles relaxed and patient can now stand and walk fairly satisfactorily. Tremors not so pronounced. He can now feed and dress himself. Speech is louder and clearer. Behaviour is fair—under supervision. He looks brighter and more alert.

CASE 3. E.G., age 18. Epidemic encephalitis at 10 years. Admitted to Rainhill Mental Hospital, June 28th, 1928.



*Previous Condition.*—Comparatively free from stigmata. Exhibits numerous ties and spasmodic twitchings of a choreiform character, pronounced when he is excited or during conversation. Some excess of saliva. Facial expression altered, but not mask-like. Gait and stance normal. Definitely feeble-minded. Emotionally unstable. No self-control. Defective moral sense—untruthful: a sexual pervert.

*Present Condition.*—No change. Ties and spasms still present. Behaviour is uncertain and morally he is depraved.

CASE 4. G.H., age 26. Epidemic encephalitis at 16 years. Admitted to Rainhill Mental Hospital, November 7th, 1928.

*Previous Condition.*—Advanced Parkinsonism. Flexed attitude. Expressionless face. Complete inco-ordination of movements. Unable to stand or walk: can run. Unable to dress or feed himself. Speech unintelligible. Constant dribbling of saliva. Defective vision with frequent oculo-gyral spasms. General stiffness and rigidity. Coarse tremors—most marked on right side. Dull and demented. Becomes impulsively violent at times. Moral qualities severely affected—he is untruthful, dishonest and prone to sexual malpractices.

*Present Condition.*—Slightly improved, but still an advanced case. He can now stand and walk fairly well. He can feed and dress himself—if given time. No sialorrhoea. No oculo-gyral spasms. Tremors limited to right side. Speech much the same. He is still very dull and apathetic. Behaviour not improved.

CASE 5. J.R.H., age 32. Epidemic encephalitis at 22 years. Admitted to Rainhill Mental Hospital, January 25th, 1929.

*Previous Condition.*—Stance and gait not much affected. Face typical. Salivation increased. Speech low and monotonous. Vision impaired. Oculo-gyral spasms very frequent and distressing to patient. Movements slow and difficult owing to rigidity of limbs. Emotionally, he is dull and depressed. At times extremely irritable and apt to become quickly excited. Cerebration slow and retarded.

*Present Condition.*—Improved. Face more expressive. No excess of salivation. Speech improved. No oculo-gyral spasms. Actions are quicker and more certain. He is bright at present, and is working usefully in the grounds.

CASE 6. G.J., age 25. No history of epidemic encephalitis. Admitted to Rainhill Mental Hospital, October 6th, 1931.

*Previous Condition.*—Typical face. Oculo-gyral spasms frequent: vision impaired. Generalized stiffness and rigidity. No sialorrhoea. He is feeble-minded. Conduct unreliable. Moral sense absent—untruthful, dishonest, vicious and sexually perverted.

*Present Condition.*—No change. Physical condition shows no improvement. Mental condition remains as before.

CASE 7. W.L., age 26. Epidemic encephalitis at 13 years. Admitted to Rainhill Mental Hospital, July 29th, 1927.

*Previous Condition.*—An advanced case. Attitude, gait and facial expression all typical. General stiffness and rigidity with severe tremors. Speech—an indistinct whisper. Great excess of saliva which dribbled from the mouth. Emotionally unstable—at times deeply depressed and potentially suicidal. Liable to impulsive action. Moral sense lacking in all respects.

*Present Condition.*—Improved. Movements freer. Tremors present but not so severe. Gait and stance improved. Speech louder and more distinct. No sialorrhoea. He is brighter at present and occupies himself usefully in the ward. Needs constant supervision.

CASE 8. J.M., age 22. Epidemic encephalitis at 13 years. Admitted to Rainhill Mental Hospital, July 29th, 1932.

*Previous Condition.*—Sequelae slight and mainly confined to eyes. Oculo-gyral spasms frequent and prolonged. No tremors. Increased muscular tone. Moral imbecile. Unmistakable mental defect with a complete lack of self-control. Noisy, restless and excited. Dishonest, untruthful and sexually perverted.

*Present Condition.*—Unchanged. Refused treatment. A difficult patient to manage.

CASE 9. A.R., age 22. Epidemic encephalitis at 13 years. Admitted to Rainhill Mental Hospital, December 12th, 1927.

*Previous Condition.*—An advanced case. Flat staring face. Gaping mouth with long strings of saliva dribbling from it. Flexed attitude. Speech slurred and fre-



quently unintelligible. Gait shuffling and very unsteady. Marked rigidity and stiffness. Coarse tremors of the arms constantly present. Unable to dress or feed himself. Feeble-minded and childish. Extremely emotional. Self-control lacking and impulsive outbursts frequent. Moral sense deficient in every respect.

*Present Condition.*—Improved. Face more expressive. No sialorrhoea. Attitude—much as before. Speech still affected, but much clearer. Gait—steadier. Tremors reduced—still present in his hands. He can dress and feed himself. Behaviour has been better recently. Now doing some simple ward work. Still very emotional.

CASE 10. T.S., 41. Epidemic encephalitis at 34 years. Admitted to Rainhill Mental Hospital, January 4th, 1933.

*Previous Condition.*—Attitude unaffected. Face—typical. Eyes—staring, oculo-gyral spasms very numerous. Tremors of arms present—mainly “intention” in type. Speech—severe stammer. Muscle tone only slightly increased. Gait normal. Weak-minded and childish. Irritable and uncertain in conduct. No self-control—acts viciously at times. Not so depraved, morally.

*Present Condition.*—Not improved. Physical condition unchanged. Still has hysterical outbursts. Unemployed.

CASE 11. W.S., age 19. No history of epidemic encephalitis. Admitted to Rainhill Mental Hospital, April 11th, 1933.

*Previous Condition.*—Typical mask face. Stand and gait both affected. Considerable muscular hypertonia. Tremors mainly confined to left side. Speech is fairly good. He is childish and weak-minded. Lacking in self-control. He has frequent outbursts of noisy excitement. Moral sense impaired.

*Present Condition.*—No improvement in either mental or physical condition.

CASE 12. R.P.T., age 28. Epidemic encephalitis at 16 years. Admitted to Rainhill Mental Hospital, December 19th, 1925.

*Previous Condition.*—A most advanced case. Unable to rise from a crouching attitude. Typical facial expression. Defective vision with oculo-gyral spasms. Excessive sialorrhoea. All limbs affected by coarse tremors which become worse during movement. Pronounced stiffness. Unable to dress or feed himself. Weak-minded and childish. Liable to impulsive and vicious conduct. Morally depraved.

*Present Condition.*—Unchanged. Refused all treatment.

CASE 13. W. E., age 36. Epidemic encephalitis at 29 years. Admitted to Rainhill Mental Hospital, December 3rd, 1929.

*Previous Condition.*—Typical “post-encephalitic.” Staring expressionless face: flexed attitude: binding muscular rigidity and stiffness. Shuffling unsteady gait. Tremors of arms present, both at rest and during movement. Constant sialorrhoea. Sight—unaffected. Speech fairly distinct. He was sullen, morose and very irritable. Uncertain in conduct and lacking in self-control. Definitely childish and simple-minded. Moral sense impaired. Patient died on August 26th, 1933.

#### VIII.—FROM THE LANCASHIRE COUNTY MENTAL HOSPITAL, WINWICK, WARRINGTON.

*General Report.*—Communicated by Dr. F. M. RODGERS, O.B.E., Medical Superintendent.

##### A.—Laboratory Work.

###### (1) Routine Work—

Urine examinations: general, 6099; special, 376; microscopic, 1118; c.s.f. Lange, Boltz, globulin, protein, 198; cell-counts, 184; Sachs-Georgi, 161; bloods: Sachs-Georgi, 301; differential, 3; malarial, 2018; gastric contents and other fluids, 6; histological, 15; slides 186; microscopic slides, 574; bacteriological examinations: vaccines, pus, sputa, swabs, smears, urines, faeces (for typhoid, dysentery, or T.B.), cultures, 462; photographs, 402; post-mortems, 52 (43 per cent. of deaths).

(2) *Research* by Medical Officers with regard to the sero-diagnosis of syphilis was continued, and is reported hereunder.

##### B.—Malarial Treatment of General Paralysis.—By Dr. J. GIFFORD, D.P.M.

During this year, 21 cases of general paralysis were admitted; of these 16, including 3 in bad health, were alone considered suitable for inoculation and successfully developed malaria. Two became positive only after three



attempts, one of these having previously had anti-specific treatment. The remaining five were very advanced and were unfit from bad health, of whom four died within one month after admission and one in two months. In addition 18 cases previously treated were successfully re-inoculated, and with one exception developed a useful series of rigors; two others failed to acquire further malaria in spite of several attempts. Of the 16 malaria-treated new cases, two have left hospital (one a voluntary patient) recovered or improved, and discharge will probably soon be granted to 2 or 3 others; 3 have died at 6 weeks, 2 months and 5 months from admission; 11 remain here, 4 showing good mental and physical amelioration, 4 slight improvement, and 3 no benefit.

Malarial blood has again been furnished to a number of other hospitals, institutions or clinics.

C.—*Ten Years of Malarial Therapy.*—By Dr. J. ERNEST NICOLE, D.P.M., and Dr. E. J. FITZGERALD.

The results of the first 10 years of malarial treatment as applied to 245 out of 368 male cases of neurosyphilis, all but 19 of which were general paralytics, have been reviewed for publication. The expectation of life after admission to hospital was found—in the non-malarialized cases—to be well within 2 years, only 5 per cent. having lived more than three years. In over 35 per cent. of the malarial cases, however, life was prolonged far beyond three years, no less than 67 cases (27 per cent.) being discharged, and a few more transferred improved. The follow-up done in 1933, revealed that of the 36 cases treated by malaria in 1923, 11 were still alive in 1933, 6 being at home (5 in very fair mental and bodily health, and one feeble). Of the 83 cases treated in 1924–27, 7 had been lost sight of after discharge and 26 were still alive, 12 of these being at home. Of the 47 cases in the 1928–30 group, 23 were alive in 1933 (12 at home and 11 in hospital), while 6 were untraced.

It is noteworthy that of the 207 cases admitted with wet and dirty habits, 119 had malaria with the result that 54 became clean. Malaria was given to 56 bed-ridden patients, and 6 were subsequently discharged while 8 are still here. Renewal of malarial treatment was found useful, for of the 49 cases who had a second attack of malaria owing to no improvement having followed the first, 7 were discharged. Of the 64 cases remaining in the hospital (58 having had malaria and 6 not), 3 have good prospects of discharge, 3 are bed-ridden, 5 are wet and dirty, while the remainder are for the most part bodily fit and able to do manual work.

Additional treatments such as bismuth and arsenical preparations seem to hasten the clinical improvement, but excellent results have been obtained by malaria alone. Serologically, the changes noted in the blood and fluid reactions have borne no relation to the presence or absence of clinical improvements. Completely negative fluids have been obtained by malaria alone. After the sixth post-malarial year, none of the 42 fluids examined showed a Lange of 4 or 5, while nearly two-thirds of them had a gold curve that did not rise above a 1. Specific tests more readily became negative in the fluid than in the blood, the Wassermann improving more often than the flocculation tests owing to its being less sensitive in treated cases. The incidence of these ameliorations, however, is highest after some years have elapsed after the conclusion of the treatment.

From these results it may be said that malaria improves bodily health in some 35 per cent. of cases, it has a beneficial effect upon the patient's habits and cleanliness, and in about 19–20 per cent. of cases it results in a clinical improvement that is likely to last many years and often allows of a resumption of healthy and useful home life.

D.—*The Presumptive Kahn and other Serological Tests.*—By Dr. J. ERNEST NICOLE, D.P.M., and Dr. E. J. FITZGERALD.

The work on the sero-diagnosis of syphilis has been concluded. The special series of 300 sera and 200 fluids mentioned last year has been



brought up to 600 sera and 380 fluids, and the total results fully bear out the conclusions reached at the end of 1932.

On 360 sera the *Presumptive Kahn* was done as well as the usual routine Kahn, Wassermann, Sachs-Georgi, Muller and Meinicke reactions and it was found that the presumptive test was much more sensitive than the routine. Indeed its absolute sensitivity was just a fraction above that of the best M.K.R. 11, its relative sensitivity, however, being just below that of the micro-Meinicke. Its specificity was not, like that of the routine test, absolute, and  $2\frac{1}{2}$  per cent. false positives were obtained.

E.—*Syphilis and the Mental Treatment Act*.—A paper read at the autumn Divisional meeting of the Royal Medico-Psychological Association, by Dr. E. J. FITZGERALD.

Some of the more important desiderata for the satisfactory treatment of neuro-syphilis are : (1) Receiving of cases (say for malarial treatment) in the pre-certifiable stage ; (2) Continuity of treatment before and during mental hospital care ; (3) Further treatment in those cases discharged with a still positive blood or fluid ; (4) Periodical examinations of "recovered" cases, such examinations to include the serological and the mental aspects as well as the physical one ; (5) Access to diagnostic and therapeutic records by all authorities concerned in the treatment of the case.

Hence a very close co-operation is required such as has not hitherto been available—between General Practitioners, Municipal Hospitals, Venereal Disease Centres, Psychopathic Clinics and Mental Hospitals. The bearing of the Mental Treatment Act, with its provision of Voluntary Patients, clinics and research, upon this question is outlined, and stress is laid upon the necessity for spreading the sphere of influence of the Mental Service beyond the four walls of the Mental Hospital or Clinic.

Other points referred to include the voluntary Patient's right to secrecy concerning his syphilis (say general paralysis), the criterion of diagnosis and cure in its medico-legal aspects, and the need for consultation between V.D. Officers and psychiatrists, both as regards the true syphilitic with mental symptoms and as regards the Mental case with syphilophobia who is consequently in need of psychotherapy.

F.—*Suicide and Society*. A paper read at the Third Biennial Conference on Mental Health, London, November 21st–24th, 1933, by Dr. J. ERNEST NICOLE.

The importance of predisposing—as compared with precipitating—causes is stressed, and the insistence of modern psychopathology upon the presence of the unconscious of "natural though perverse" tendencies is dealt with. It is described how, in infancy and childhood, marked reactions of inferiority, aggression and guilt are liable to be produced, and how suicide provides a solution of the stresses generated by each of these reactions. Furthermore, these reactions are often reinforced and added to during later childhood and adolescence by certain family situations, by the influence upon the child of parental conflicts and stresses, and by the insistence of parents and educators upon the importance of sin, rivalry and certain conventional forms of "success." Examples of these influences are given and reference made to the lessons to be learnt from an examination of primitive societies. It is finally suggested that suicide, being the result of stresses arising out of the process of socializing youthful minds, must be one of the prices we pay for our culture (the others being psychopathic and mental disorders, and some forms of crime) and that this price is too high for it to be paid without demure. Hence the fault must lie either with the culture that is being enforced or else with the manner of its enforcement. In any case, it is only when man has freed himself from these forces of aggression, inferiority and guilt that he will be able to love and withstand life without fearing or seeking death.



G.—*Publications.*

1. "The Sero-Diagnosis of Syphilis (Second Report)." By Dr. J. ERNEST NICOLE and Dr. E. J. FITZGERALD. (*Journal of Mental Science*, January, 1933.)

2. "A Comparison of the Various Meinicke Methods," by Dr. J. ERNEST NICOLE. (*British Journal of Dermatology and Syphilis*, May, 1933.)

3. "Some Flocculation Tests for Syphilis." By Dr. J. ERNEST NICOLE and Dr. E. J. FITZGERALD. (*Urologic and Cutaneous Review*, June, 1933.)

The material embodied in the above was reviewed in last year's Report.

## IX.—FROM THE LONDON COUNTY MENTAL HOSPITAL, BANSTEAD.

*General Report.*—By Dr. A. A. W. PETRIE, F.R.C.P., F.R.C.S.E., D.P.M., Medical Superintendent.

No special investigations have been undertaken in the year under review. The *Routine Work of the Laboratory* during the year may be summarized as follows :—

Urine tests (general), 4120 ; plated for typhoid bacilli, 264 ; faeces, plated for typhoid and dysentery bacilli, 1238 ; sputum and faeces (stained and examined for T.B.), 215 ; Widal blood agglutination tests for typhoid, etc., 765 ; blood cultures, 126 ; other tests, throat swabs, etc., 22 ; malaria blood slides, stained and examined, 82 ; blood counts, 56 ; faeces tests for occult blood, 32 ; post-mortem examinations, 107 (79 per cent. of the deaths).

*At Central Laboratory.*—Blood Wassermanns, 446 ; c.s.f. tests, 103 ; histological reports, 53.

Much of the routine work of the laboratory has been devoted to investigating a recurrent outbreak of typhoid fever. One carrier has been isolated in the year under review, and cholecystectomy was performed. No growth was obtained from the excised gall bladder, but with the exception of some atypical bacilli soon after the operation, no positive results have since been obtained from the faeces. All potential carriers, either because they showed some unexplained agglutination in the blood to this group of organisms, or because they were close contacts, were isolated, and inoculated with T.A.B. vaccine, and all such cases are now in four special wards. One of these cases contracted the disease within 18 days of inoculation with 1 c.c. of T.A.B. vaccine. The patient's agglutination changed from a titre of 1/125 to each of T.A. and B., to an agglutination titre of 1/1000 to B. typhosus and 1/50 to B. paratyphosus B. The infection was proved by a positive blood culture of B. typhosus, although the illness was somewhat modified. Although active disease terminated six months ago, B. typhosus is still being obtained from this patient's faeces, suggesting she may become a carrier. Two cases of the disease followed a very modified course, being mistaken for influenza, until subsequent agglutination proved the nature of the disease. These cases helped to continue the epidemic.

The blood Wassermanns were taken in practically all cases of direct admission totalling 168 men and 226 women. Of these :—

143 men and 211 women were negative ; 1 man and 1 woman were negative to the Wassermann, but showed a positive Meinicke reaction ; 8 men and 9 women were positive in the blood serum, but negative to all tests in the c.s.f. ; 14 men and 5 women were positive both in the Wassermann and c.s.f.

Of those positive to the blood and negative in the c.s.f., 4 men and 2 women were clearly suffering from Neurosyphilis ; in 2 men and 1 woman the clinical evidence was doubtful ; and in 2 men and 6 women the psychosis did not appear to be associated with the syphilis.



Among the causes of death are two cases of cerebral tumour and two cases of rupture of the left ventricle of the heart, following coronary atheroma. It is noticeable that five cases of rupture of the left ventricle of the heart following coronary atheroma have occurred fairly recently, two being in the year immediately under review.

#### X.—FROM THE LONDON COUNTY MENTAL HOSPITAL, BEXLEY.

*General Report.*—By Dr. G. CLARKE, Medical Superintendent.

##### A.—Laboratory Work.

The following is a summary of laboratory work carried out during the year :—

Urine : general examinations, 294 (these are in addition to the usual "routine examinations" done in the various wards); cultures, 10; concentration test, 1; haematoporphyrin, 1. Faeces : for bacteriological examination, 20; occult blood, 19; Blood : for malaria, 31; differential counts, 11; sugar estimation, 3; Widal, 3; urea, 2; cultures, 2. Bacteriological examinations: sputa, 92; swabs (various), 20; pathological fluids, 7. Pathological tissues for microscopic sections, 36. Post-mortem examinations, 74 (65 per cent. of deaths).

##### B.—Research Work. By Dr. CLIFFORD ALLEN.

###### 1. *A Case of Hypertelorism.*

A case of hypertelorism (E.F.S., admitted September 29th, 1933), was diagnosed and the facts concerning this and the related diseases (craniofacial dysotosis, acrocephalosyndactyly, oxycephaly, etc.) were collected. A theory that these diseases were due to a temporary cessation of cerebral growth during intra-uterine life allowing premature synostosis of the cranial sutures was suggested.

(This paper has been submitted to the *Journal of Neurology and Psychopathology*.)

###### 2. *The occurrence of introjection in schizophrenia.*

Cases of Schizophrenia which showed introjection were collected, and six cases were used to form the basis of a paper on the occurrence of introjection in this disease. It was found, as Freud pointed out, that much of the projection found in paranoid schizophrenics was dependent on introjection. For example, the projection of homosexual wishes producing delusions of persecution is primarily dependent on maternal introjection. A certain amount of evidence that introjection occurs at the oral stage was collected, thus confirming the work of Freud and Abraham.

(Paper submitted to the *Psychoanalytic Review*.)

###### 3. *A Case of cerebromacular degeneration with extracortical signs.*

A case of cerebromacular degeneration (G.M., admitted November 12th, 1932; died December 11th, 1933) of the adult type, was diagnosed and observed to have extracortical signs. These were rigidity of the limbs and a mask-like facies. There was a tremor of the lips and tongue. Her gait was also festinant.

The literature of this condition was reviewed and a paper was written.

This was published by the *Journal of Neurology and Psychopathology*, July, 1933, under the title "The Extracortical Manifestations of Cerebromacular Degeneration."

## XI.—FROM THE LONDON COUNTY MENTAL HOSPITAL, CANE HILL.

*General Report.*—By Dr. G. A. LILLY, M.C., D.P.M., Medical Superintendent.

A.—*Routine Laboratory Work.*

A summary of routine laboratory work carried out during the year is given hereunder :—

Urine examinations: routine, 1360; special, 107. Faeces: occult blood, 9; typhoid and dysentery, 68. Blood: complete counts, 18; malarial, 31; blood sugars and ureas, 6; sugar and albumin estimations, 17; c.s.f. (Lange), 2; Widal's, 19. Sputa: T.B., etc., 27; throat swabs, 21; other swabs, 10; stomach contents, 3. Post-mortem examinations, 110 (69·6 per cent. of deaths). Sent to Maudsley Laboratory: blood and c.s.f., 693; histological sections, 10.

B.—*Publication.*

“Acetylcholine Therapy in Epilepsy.” By Dr. JOHN ERNEST SETON LLOYD.

The investigation consisted in the observation of the frequency of fits in 21 epileptic patients following the hypodermic injection of 0·1 gram. of acetylcholine bromide twice daily for three months. Special care was taken to treat controls similarly. It was found that the subjects were unaffected by the treatment. In a further investigation it was found that the cerebrospinal fluid pressure was unaltered by the same procedure. (*British Medical Journal*, June 10th, 1933.)

## XII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, CLAYBURY.

*General Report.*—By Dr. G. F. BARHAM, Medical Superintendent.

A.—*Laboratory Work.*

The following is a general summary of laboratory work carried out during 1933; 10,995 specimens were examined in the laboratory, as follows :—

Urines: routine, 4,363; bacteriological, 777; urea concentration, 56; diastatic index, 3. Faeces: bacteriological, 2,996; occult blood, 11. Blood: sugar tolerance curves, 625; malarial films, 510; counts, 471; Widal agglutination tests, 221; urea, 40; culture, 8; bromide, 34; Van den Bergh, 3. C.S.F.: bi-coloured guaiac, 319; miscellaneous, 4. Sputum: T.B. and other organisms, 124. Skin scrapings: for tinea, 323. Pus and pathological fluids: bacteriology, etc., 42; throat swabs: bacteriology, 57. Miscellaneous: test meals, 2; vomit examinations, 6. Post-mortem examinations, 97 (74 per cent. of deaths).

B.—*Research work in progress.*

(a) By Dr. SIDNEY WALPOLE HARDWICK, M.R.C.P., D.P.M.

1. The cerebro-spinal fluids of over three hundred cases obtained from London County Council Mental Hospitals have been examined to ascertain the value of a new colloidal (*bi-coloured guaiac*) reaction. Carried out in co-operation with the central laboratory. To be published in the *Journal of Mental Science*.

2. A clinical estimation of bromide in blood, following similar work already accomplished on this subject in America and elsewhere.

3. In conjunction with Mr. A. H. Tingey, M.A., an investigation into the calcium content of the blood in various psychoses.



(b) By Dr. W. J. LASCELLES, D.P.M.

A continued investigation of the haemoclastic crisis in various psychoses.

(c) By Dr. H. H. STEADMAN, D.P.M.

A continued investigation into the prognostic value of the estimation of the blood sugar in various psychoses.

C.—*Observations on Typhoid Carriers.*—By Dr. S. W. HARDWICK, M.R.C.P., D.P.M.

The occurrence at Claybury of sporadic cases of typhoid fever for many years past and the occasional outbursts of small epidemics recently, has necessitated the most concentrated effort possible in the detection and control of carriers of the disease. It is felt that the observations which have been made, although not original, contain matter of interest to workers in mental hospitals.

D'HERELLE<sup>1</sup> supports the classification of carriers into : (1) incubating ; (2) sick ; (3) convalescent, and (4) recovered. This is a comprehensive conception since it includes incubators, who by definition would fall into the carrier category. However, the usual practical classification into temporary carriers (patients excreting the organisms up to six months after the termination of fever) and into chronic carriers, is adopted in this report. Where reference below is made simply to "carrier," the chronic or permanent carrier is implied.

It had been customary at Claybury for many years to supervise all cases who have suffered from typhoid fever. Precautions in respect to the dissemination of disease by excreta were enforced, and bacteriological examination of the faeces was performed as regularly as possible every month. With the outbreak of each epidemic, or where the number of sporadic cases reached epidemic proportions, the patients of the infected wards were investigated also. The usual routine in the latter case was to examine six consecutive stools. The method in use before July, 1933, was to emulsify the specimen of stool in sterile saline, and plate on a six-inch plate of MacConkey's medium by the stroke method. Suspicious colonies were subcultured on broth and confirmed by the sugar reactions and agglutination test.

Prior to this date, twelve patients were regarded as typhoid carriers, and this was based in each instance on the recovery of the organisms from the excreta at least on one occasion. Some of the carriers had been found in the follow up examination of cases of fever, others were found during the routine examination of old typhoid cases, whilst the remainder were discovered during the examination of all the members of the infected wards.

In July, 1933, the glycerin-saline method<sup>2</sup> was adopted, and within a few weeks four further carriers were discovered. Two of these cases had suffered previously from typhoid fever, and one of the two was already regarded with suspicion. The other two cases were entirely unsuspected.

The majority of our carriers who are housed in isolation from the main building have since been subjected to a more intensive investigation by the new method : approximately one volume of the specimen of faeces, obtained not later than twelve hours after evacuation, is emulsified with three volumes of glycerin-saline (30 per cent. glycerine in 0.6 per cent. saline). It is allowed to stand for one hour, and then inoculated by the stroke method on MacConkey's medium (direct plating). The emulsion is allowed to stand at room temperature for 18–24 hours and a further plate is inoculated (delayed plating).

Table I below summarizes and contrasts the old saline emulsion method and the glycerin-saline emulsion method. In each case a positive result indicates that the typhoid bacillus was isolated and proven by sugar and agglutination tests, unless otherwise stated.



TABLE I.  
Comparison of Saline emulsion method and Glycerin-saline emulsion method.

Names of carriers.	Saline emulsion method.					Glycerin-saline emulsion method.		
	Number of examinations.		Results.		Period of examination.	Number of examinations over period of 6 months.	Results.	
			Posi- tive.	Nega- tive.			Posi- tive.	Nega- tive.
					months.			
M.M.A.	Faeces	28	—	28	17	21	2‡	19
M.A.B. ...	„	27	2	25	26	14	1	13
K.B. ...	„	—	—	—	—	33	2‡	31
D.C. ...	„	32	2	30	25	25	3	22
P.D. ...	„	20	1	19	26	22	1	21
A.D. ...	„	24	1	23	24	31	8	23
A.R.G. ...	„	—	—	—	—	24	7	17
C.G. ...	„	10	4	6	10	27	2	25
J.P. ...	„	17	1	16	23	18	1	17
E.M.R.	„	6*	2	4	3	26	5	21
L.S. ...	„	23	—	23	26	23	2	21
S.J.T. ...	„	12‡	2	10	13	22	10‡	12
E.T. ...	„	45	3	42	87	26	3‡	23
T.V. ...	„	27	10	17	34	11	3	8
L.W. ...	„	8	1	7	2	25	—	25
M.W. ...	„	—	—	—	—	23	5	18
B.E.W.	„	19	—	19	5	17	5	12
	Total	298	29	269		388	60	328

Comparison of the results of direct plating and delayed plating by the glycerin-saline method on the positive cases is given below in tabular form :—

Faeces.				
Total number of positive specimens	...	...	...	60
Number of specimens positive to direct plating only	...	...	...	12
Number of specimens positive to delayed plating only	...	...	...	40
Number of specimens positive to direct and delayed platings	...	...	...	8

Table I shows figures which verify the claims already made elsewhere of the advantage of the glycerin-saline method<sup>3</sup>, 9·7 per cent. of examinations were positive by the old routine compared with 15·8 per cent. by the new method. It also demonstrates in the carrier cases, M.M.A. and B.E.W., that the organisms were recovered by the new procedure and missed by the old. The number of positive results obtained by delayed plating far exceeds those obtained by the direct method. In many cases of delayed plating practically a pure culture of typhoid was obtained. In all probability the number of positive results in our series would have been increased if facilities had been available to curtail the time between evacuation of stool and emulsification, and if in each case, a soft or semi-fluid evacuation was tested. Most of the stool specimens submitted for examination were hard and formed<sup>3</sup>. It is of note that in four cases, *B. paratyphosus* “B” was recovered on one occasion.

In addition to the examination of the faeces, the urine from these cases has been investigated in as much detail, and of 341 specimens examined in all a positive result has been obtained on 11 occasions. Seven carriers (1 a male, T.V.) grew the organism in at least one instance. The method of examining the urine is as follows: the supernatant fluid is poured off, leaving a small quantity containing the deposit (if any), at the bottom of the glass. This is transferred to a beaker and platings are made: (a) one

\* Specimens examined within three months of attack of typhoid fever.  
† Nine of the twelve specimens examined within six months of attack of typhoid fever.  
‡ *B. Paratyphosus* B isolated on one occasion.



hour after standing (direct method); and (b) 18–24 hours afterwards (delayed method). Comparison of the results of direct and delayed plating is shown below in tabular form.

Urine.

Total number of positive specimens	...	...	...	...	11
Number of specimens positive to direct plating only	...				1
Number of specimens positive to delayed plating only	...				9
Number of specimens positive to direct and delayed plating	...				1

Whether in some or all of these cases, recovery of the typhoid bacillus was due to faecal contamination or to a true urinary infection has not been definitely proved. Browning<sup>3</sup> believes that in many reported cases contamination does not wholly account for the findings, and he considers that a typhoid bacilluria is probably explained by recurrent bacteraemia, and transient localization of infection in the kidney.

Despite improved procedure and concentrated frequent examination of faeces and urine, 5 of the carriers have not shown positive results over periods of 4 to 6 months. Apart from the faults of technique, the periodicity of the excretion must be considered, for it is possible that there are cases with remissions up to a year or longer<sup>4</sup>. This is of importance, and the findings, as far as they go, support the view of the futility of routine examination of 3 to 6 specimens in suspected cases, when an exhaustive search is being made<sup>3</sup>.

Of the 17 typhoid carriers, 10 suffered from diagnosed typhoid fever previously. The other 7 cases were unsuspected and were discovered during the routine examination of infected wards. The case histories of these have been investigated and it is possible that two of the patients suffered from typhoid fever which was missed. Another patient was a transfer from a mental hospital, and the discovery of her state was accidental. The remaining 4 cases have been checked up as far as possible, and it appears that the original infection was either overlooked or more probably they suffered from a mild, ambulatory form of the disease<sup>5, 6</sup>.

In the wards where typhoid fever has been endemic, the closest relation has been found between the outbreak of disease and the presence in the ward of one or more carriers. Some light has also been thrown on previously unexplained outbreaks. The best example is shown by the carrier A.G., who was entirely unsuspected at the time. This patient, a case of dementia praecox of degraded habits, developed fever in G.2 ward in 1931. It was probably typhoid, and she could have been infected by carrier N.B. who was in this ward at the time. She was treated in an infirmary ward and sent back to G.2 when she had recovered from her illness. Within a month of her return, 3 cases of typhoid fever occurred. In 1932 there was a single sporadic case, and in January, 1933, an epidemic of 4 cases occurred, followed by 3 further cases in February. She was transferred to D.3 ward in March, 1933, and in May five cases occurred in this ward. The patient was discovered to be a carrier during the routine examination of all the patients in the D block in July, 1933.

The mode of spread of the typhoid infection in mental hospitals is probably by contact with faecal matter, infected food, or by direct personal contact.

An interesting observation was made in 1928, when an epidemic occurred in a certain ward: several specimens were taken from the commodes after they had been cleaned by the ordinary means, and from some *B. typhosus* was grown.

The relative infectivity of the various carriers is difficult to assess. It seems likely that apart from considerations such as periodicity of excretion and dirtiness in the habits of the patient, some carriers are far more dangerous than others<sup>7</sup> (e.g., carrier A.G., mentioned above). On the other hand, carrier P.D., probably an intermittent excreter, gives a history of typhoid fever in 1910. Special precautions in her case were taken as late as 1930. However, the incidence of typhoid fever has been



greater in the last 5 years than in the previous 10 years. D'Herelle<sup>1</sup> states that all "incubating" and "sick" carriers are infectious, but all healthy carriers are not necessarily always infectious.

Between June and July, 1933, the Widal reaction was performed on the majority of patients from the D block, where a recent unexplained epidemic of typhoid fever had occurred. The ordinary routine method of performing the test was used. In addition, all the known carriers and suspected carriers at that time were examined. One hundred and forty-two patients were examined in all, 23 of these giving a positive result to *B. typhosus*. The positive cases are quoted in full in Table II since they present many interesting features.

TABLE II.  
Positive Widal reactions in a group of 142 patients.

	Patient.	Widal <i>B. typhosus</i> "H" June-July, 1933.	History of Typhoid fever.	
Group of chronic carriers.	T.V.	1/50	None.	? Suffered from a missed abortive attack.
	D.C.	1/250	1929.	
	P.D.	1/25	1910.	
	S.J.T.	1/50	1932.	
Group of recent typhoid fever cases.	N.R.	1/50	1933. July.	Subsequently proved a temporary carrier. Relapse of typhoid fever in August, 1933, and during it, faeces grew <i>B. typhosus</i> .
	E.W.	1/250	"	
	E.C.	1/250	"	
	H.H.	1/250	"	
	M.E.	1/125	May.	A temporary carrier subsequently proved a chronic carrier.
	J.L.	1/25	"	
	E.R.	1/125	Feb.	
	M.S.	1/50	"	
Group of old typhoid cases.	F.C.	1/125	Jan. 1932,	
	K.M.	1/250	May.	
	F.S.	1/25	1929, March.	
	E.G.	1/50	1933, Jan.	
Group with no history of typhoid fever.	E.H.	1/50		One T.A.B. inoculation, Jan., 1933. Developed probable typhoid fever within a week afterwards.
	D.P.	1/25		
	E.S.	1/50		No history of T.A.B. inoculation. ? Suffered from a missed abortive attack.
	E.B.	1/125		
	M.P.	1/125		Do. do. Do. do.
				Widal July, 1929, <i>B. typhosus</i> , 1/250. ? Suffered from a missed abortive attack.
	A.G.	1/50		Suspicious febrile attack in May, 1931. Proven a chronic carrier in July, 1933.
	M.W.	1/250		Suspicious febrile attack in February, 1933. Proven a chronic carrier in August, 1933.



Amongst the negative results were 7 carriers. The urine and stools of this group of 23 patients have been examined since as thoroughly as possible by the methods given above. Shortly afterwards patients A.G. and M.W. were proved carriers conclusively.

Approximately half of our carriers gave a positive Widal, and the other half a negative result. This finding approximates to those of other observers<sup>7, 8</sup>. Although we have found the agglutinable strength of the carriers' serum to vary from time to time in the same patient<sup>3</sup>, it is realized that the finding was not significant since for the major part we have used a bacterial suspension whose agglutinable strength is not given.

With regard to the Widal reaction, it is of note that Pijper<sup>9</sup> mistrusts its use in the diagnosis of typhoid fever since he has shown figures where only 50–60 per cent. of cases give positive results. He not only recommends the complement fixation method in the diagnosis of the disease, but he believes it is a suitable method for the detection of typhoid carriers<sup>10</sup>. His observations stress the danger of missing a case of the disease if too much reliance is placed on one test; and missed cases of this type probably constitute a fruitful source of the dangerous, insidious carrier.

In our experience with carrier detection, the Widal reaction has been of use, for attention was drawn to 2 cases who were subsequently proven by bacteriological methods<sup>11</sup>.

McKendrick's cutaneous reaction has been tried in a few cases and the results were indefinite<sup>12</sup>. Garbat's recommendation for cultivation of the duodenal contents is difficult to carry out in mental hospital patients, and has not been tried<sup>13</sup>.

The general health of our carriers has been fairly good<sup>8</sup>. In no cases are symptoms referable to gall bladder disease, in no case is the gall bladder palpable or tender, with the exception mentioned below. This, of course, does not exclude trouble. Carrier M.K. is subject to flatulence at times, but her symptomatology is vague. Bony lesions or other sequelae of typhoid fever have not been noted.

Carrier D.C., the exception, is subject to well marked attacks of biliary colic, associated usually with subsequent jaundice, sometimes with diarrhoea, and invariably with a sharp rise in temperature. The attacks vary in length, but usually last a few days. During an attack she is prostrated, and extremely tender over the region of the liver and gall bladder.

Records are not available to show the exact number of cases of diagnosed enteric fever before 1921, but 80 cases in all have occurred since that year. Sixty-two cases have occurred since the commencement of 1929, and of these, 7 have been proven excretors of typhoid bacilli, 6 months, or more after the disease. This gives an incidence of 11·3 per cent. carriers in the Claybury series, and the true figure is higher if one includes additional carriers whose disease was missed, or who probably suffered from an abortive attack. This supports the contention that the incidence of the carrier in mental hospitals is much higher than in the general population<sup>3</sup>.

Of the 17 carriers, only 2 are males, which gives a proportion of 8·5 female to 1 male.

It is generally admitted that the most efficient means of controlling the danger due to carriers, especially in institutions, is prophylactic inoculation with T.A.B. This has been carried out at Claybury in certain blocks of wards where an outbreak occurred. Vaccination of all patients and staff of institutions has been strongly advocated<sup>14</sup>. It is as well to note that Browning<sup>3</sup> clearly states that, even when this measure is adopted, it "does not obviate the necessity for the detection and treatment of carriers." Some of the reasons for this view are as follows: It is possible for a case of typhoid fever to occur in an inoculated patient probably by means of massive infection<sup>15</sup>; the conditions necessary for a massive dose



are peculiarly possible in mental hospitals ; the actual attack is likely to run an atypical course and it may pass unrecognized. Vaccination does not necessarily prevent a patient from becoming a carrier, although the chances of his becoming so would appear less<sup>16</sup>. Most important, the possibility of a carrier being subsequently discharged or transferred from hospital must be borne in mind<sup>6</sup>.

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### XIII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, COLNEY HATCH.

*General Report.*—Communicated by the Medical Superintendent.

No specific form of research, psychological or pathological, has been completed at this hospital during the past year. Routine examinations have been conducted on blood, urine, sputum, and a number of histological preparations have been made for diagnostic purposes. Post-mortem examinations have been conducted in 77 cases (49·4 per cent. of the deaths).

The routine investigations have been conducted in various parts of the hospital and by different observers, so that it is not practicable to indicate the number of occasions on which the different observations were made.

### XIV.—FROM THE LONDON COUNTY MENTAL HOSPITAL, EWELL.

*General Report.*—By Dr. L. H. WOOTTON, M.C., D.P.M., Medical Superintendent.

The routine laboratory work for the year is as follows :—

Urines : routine and microscopical, 786. Faeces : occult blood and T.B., 5. Bloods : total counts, 5 ; differential, 2 ; films, 7. Van den Bergh reaction, 1. Gastric acidity, 1. C.S.F. : colloidal gold reaction, 2. Bacteriological : (including faeces, urine, pus), 30. Cultures, 17. Throat swabs, 5. Sputum, 27. Post-mortem examinations, 14 (67 per cent. of deaths). Histology : organs cut and stained, 33.

*After Histories.*—The investigation into the after-history of patients discharged from the hospital since its re-opening in 1927 is now completed and ready for publication.

The following investigations are being proceeded with :—

(a) An analysis of the first 100 patients admitted to this hospital on a voluntary basis.

(b) Studies on changes in the blood volume in schizophrenia.



## XV.—FROM THE LONDON COUNTY MENTAL HOSPITAL, HANWELL.

*Laboratory Report.*—Communicated by the Medical Superintendent.

In addition to urine examinations done in connection with the admission or annual physical examination of patients, the following pathological work was done during 1933 :—

Urine : examinations, 226. Faeces : (dysentery and typhoid), 250. Blood : films (malaria), 103. Scrapings and smears, 50. Swabs, 15. Sputum, 26. Sections, 16. Blood counts, etc., 20. Post-mortem examinations, 124 (57 per cent. of deaths).

Practically all media are made in the laboratory.

## XVI.—FROM THE LONDON COUNTY MENTAL HOSPITAL, HORTON, EPSOM.

A.—*General Report.* By Dr. W. D. NICOL, M.R.C.P., D.P.M., Medical Superintendent.

*Pathological Department.*

Analysis of pathological investigations :—

Urine examinations : routine, 4,104 ; bacteriological, 98 ; sugar estimations and examinations for acetone and diacetic acid, 385 ; urea concentration, 14. Stools : complete examination for enterica organisms and *B. dysenteriae*, 211 ; number containing *B. typhosus*, 4 ; *B. paratyphosus* A, 1 ; *B. paratyphosus* B, nil ; *B. dysenteriae*, nil ; 40 examinations for *B. tuberculosis* (two contained T.B.) ; 24 for occult blood, 3 for fat content. Blood : differential count, 12 ; 25 examinations for sugar content, 16 for urea content, 24 for culture, 28 agglutinations for enterica group and *B. abortus* (Bang) ; for Van den Bergh reaction, 5. Pus : 37 examinations for pathogenic organisms ; throat swabs and culture for *B. diphtheriae* and other pathogenic organisms, 65 (1 specimen positive for *B. diphtheriae*) ; 51 sputum examinations for T.B. and other pathogenic organisms (9 specimens were found to contain T.B.) ; gastric contents, 7 complete analyses ; cervical swabs : 10 examinations for pathological organisms ; eye swabs, 4 ; examinations for pathological organisms. C.S.F. : 2 examinations for pathological organisms. Pleural fluid : 4 examinations for pathological organisms. Tissues : 65 histological examinations. Post-mortem examinations were held on 125 patients (75 per cent. of deaths).

*X-Ray Department.*

This department continues to do radiography for the neighbouring London County Council Mental Hospitals.

The number of successful plates registered during the year 1933 was 733, and the total number of cases examined was 467 ; of these, 274 and 80 respectively related to Horton patients.

B.—*The relation of Syphilis to Mental Disorder and the Treatment of G.P.I. by Malaria.* By W. D. NICOL, M.B., M.R.C.P.

When the Wassermann reaction was first employed in mental hospital practice as a routine investigation, it was thought that syphilis was intimately related with the mental symptoms of the psychotic. Nowadays, apart from General Paralysis of the Insane, syphilis is not regarded as a causal factor in the development of a psychosis. In the secondary stage of syphilis, toxic confusion with delirium and hallucinations is sometimes observed ; in the tertiary stage too, mental symptoms may occur with cerebral syphilis and in many cases the differentiation between this condition and the more serious affection of G.P.I. often presents considerable difficulty.

The presence of a positive Wassermann reaction in the cerebro-spinal fluid in a patient suffering from mental illness, does not necessarily indicate



general paralysis ; it is not uncommon for cases of mental disorder to exhibit a positive serum and in a few cases positive cerebro-spinal fluid, but in which there are no signs of neuro-syphilis, the positive reactions merely affording evidence of old infection of syphilis, in no way to be regarded as an aetiological factor. Only then in the cerebral syphilitic with mental symptoms and in the general paralytic, can spirochaetal infection be regarded as being directly responsible for the genesis of mental disease.

Since the war, the incidence of syphilis has decreased ; is the incidence of G.P.I. also falling ? This is one of the most interesting problems that confronts both the venereologist and the alienist. In 1930\* were published some figures relating to the incidence of syphilis amongst the insane in four of the London County Mental Hospitals. These results are worth recording, as all the laboratory tests were carried out at the Central Pathological Laboratory at the Maudsley :—

*Wassermann Reactions.*

	Total examined.	Wassermann.	G.P.I.	Non- paralytics.
		Per cent.	Per cent.	Per cent.
Cane Hill—				
Wootton, 1913 ...	284	89 or 31	66 or 23	23 or 12·5
McCowan, 1921 ...	150	44 or 29·3	32 or 21	12 or 10
Hanwell—				
Lilly and Hopkins, 1923–25 ...	412	105 or 25·5	50 or 12·1	55 or 15
Long Grove—				
Poynder, 1924–29 ...	946 (males)	125 or 13·2	87 or 9	38 or 4·4

From these figures relating to new admissions it can be seen that the incidence of syphilis has gradually decreased, from 31 per cent. in 1913, to 13 per cent. in 1924–29. The greater incidence of non-paralytics at Hanwell may be explained by the theory put forward by Mott, that syphilis is most prevalent in the West End of London, from which district the majority of Hanwell patients are drawn. Regarding the incidence of G.P.I. great caution should be exercised in coming to any definite conclusion. Through the courtesy of the Board of Control, the writer had access to the figures for general paralytic admissions to mental hospitals in England and Wales between the years 1907–31. Though an apparent decrease in the incidence of G.P.I. is shown, many factors should be eliminated before making any authoritative statement. In the London County Mental Hospitals alone, since the advent of malaria therapy, admissions suffering from general paralysis of the insane have been concentrated in two or three hospitals where treatment is carried out, thus giving a high incidence for admissions in one hospital and a very low one perhaps at another. A further important consideration, which not only complicates statistical figures in a large local authority like London, but also those for the Board of Control, is the increasing fashion for general hospitals in the big towns to undertake treatment by malaria or other heat producing agents. Before the days of malaria therapy cases of general paralysis were never seen in the wards of a general hospital, now many are treated in both voluntary and municipal hospitals thus escaping certification and detention in a mental hospital.

Now that we have a means at our disposal for treating the sufferer from general paralysis, the importance of early diagnosis cannot be over-estimated. The diagnosis should be confirmed by serological examination,

\* Poynder, *Journal of Mental Science*, lxxvi, p. 107, 1930.



but care must be exercised in labelling a given case as one of G.P.I.—the possibility of a psychosis being superimposed on a latent syphilitic must not be lost sight of. In making a diagnosis, differentiation between psychosis in association with cerebral syphilis and general paralysis must be made. The onset of the former condition is rapid, while that of G.P.I. is much more insidious. A history of the original infection is often of much assistance in diagnosis; the cerebral syphilitic frequently gives a definite history of an attack of syphilis, the general paralytic often quite honestly denies ever having had an attack, the symptoms being so mild that they were not observed at the time; secondary reactions are the exception, not the rule. The physical signs are important, especially the localization which occurs in cerebral syphilis. In an early case of G.P.I. physical signs may be entirely absent. In mental hospitals, however, cerebral syphilis is rare—at Horton only 7 cases in 7 years. The general practitioner must always be on the lookout for the early pre-parietic symptoms of the general paralytic. Unfortunately these symptoms are protean in character and very vague. Much depends on the skill of the clinician. Alteration in personality with loss of the finer habits, emotional irritability, apathy, loss of weight, forgetfulness and indefinite neurasthenic symptoms are some of the changes which may occur in the individual. Symptoms of this nature, or unexpected fits in an adult between the ages of 30 to 50 should make it imperative for further investigations to be carried out, especially a lumbar puncture. It is only when the disease has advanced a stage further, that evidence of a definite psychosis is forthcoming. It is possible to classify cases into different types—the grandiose exalted form, in which delusions of grandeur and wealth are prominent features, the maniacal agitated form, in which restlessness and increased psychomotor activity predominate, the depressed form, characterized by the presence of delusions of persecution, often of a somatic nature, and lastly, the simple dementing form, in which general mental reduction is more obvious. By this time, one or more of the physical signs may be present. Argyll Robertson pupils in some cases, tremors of tongue and lower part of face with a loss of expression, increased tendon reflexes (except in those cases accompanied by tabes), slurring of speech, and a shuffling unsteady gait.

The results of treatment by malaria have already been summarized in a previous paper\*, an abstract of which appeared in the Board of Control Report for 1932 (Part II, p. 56). Three important factors appear to influence the results—the duration of the disease before treatment, the clinical type of G.P.I. and the reaction to body weight. Second courses of treatment by malaria in those cases which have not responded to a primary course, do not afford any hope of further recovery. It seems almost certain that if a case of G.P.I. does not improve mentally within the first nine months after malaria therapy, he will not improve at all, apart from physical improvement which occurs in almost two-thirds of all cases treated.

Regarding the actual management of a case during malaria, the most important safeguard is the temporary abortion of fever by a small dose of quinine (5 grains in mosquito inoculated cases, and  $2\frac{1}{2}$  to 3 grains in blood inoculated) in those cases which give rise to anxiety. This frequently occurs about the fourth or fifth day, before the patient can be considered to have had sufficient treatment. This temporary interruption has rendered malaria a comparatively safe therapeutic agent. The advantage of the small dose is that the strain of malaria is not lost, a remission of fever (from 10–18 days) occurs during which time the patient regains his physical strength and when fever recommences the attack is seldom so severe as the first. The indications for temporarily interrupting the fever are continued hyperpyrexia, a persistent high pulse rate after the temperature

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\* A review of seven years' malaria therapy—W. D. Nicol, *Journal of Mental Science*, October, 1932.



has fallen, faintness or collapse during the paroxysm, persistent vomiting, the occurrence of seizures, the earliest signs of jaundice and a change of the intermittent character of fever to a remittent type.

The rationale of malaria therapy is still an unsolved problem ; in our present state of knowledge it must be regarded as purely empirical. As a result of treatment two interesting facts have come to light—the alteration in serology and the appearance of the brain post-mortem. It is not uncommon for treated cases to exhibit completely negative serological findings, but there appears to be no correlation between a negative c.s.f. and recovery of mental symptoms. The brain of the treated general paralytic presents an altered picture. The thickened meninges are seldom seen and the absence of spirochaetes is an almost constant feature. Forty-two brains of general paralytics treated at Horton have been examined by Mr. Geary at the Central Pathological Laboratory. The results are tabulated in the accompanying table :

	Total.	Spirochaetes ++	Histological Examinations.			Total.
			Peri-vascular changes.	Slight changes.	No change.	
Treated ...	31	2 (1 Cong.)	7 (2 Cong.)	2	9	18
Untreated ...	11	3	6 (2 Cong.)	3	1	10

The absence of the characteristic perivascular changes in most of the treated cases is marked. In this series are included four congenital cases and it is noteworthy that treatment in these cases produced no pathological improvement. Spirochaetes were present in only one acquired case which had received treatment. (*British Journal of Venereal Diseases*.—Oct., 1933.)

XVII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, LONG GROVE.

*Report on Laboratory Work.* Communicated by the Medical Superintendent.

A summary of routine laboratory work during the year is given below :—

Blood : counts, 105 ; Widal tests, 150 ; sugar estimations, 20 ; glucose tolerance curves, 6 ; urea N estimations, 12 ; concentration tests, 7 ; cultures, 6. Faeces : bacteriological, 284 ; occult blood, 35. Sputum : bacteriological examinations, 119. Urine : routine examinations, 1,400 ; bacteriological, 49 ; sugar and acetone estimations, 284 ; bile and albumen, 20. Miscellaneous : bacteriological examination of pus, 404 ; urethral smears, 5 ; pleural fluids, 10 ; test meals, 5 ; examination of skin scrapings, 36 ; throat swabs, 4. Operation and Post-mortem sections cut for examination, 40. Post-mortem examinations, 80.

XVIII.—FROM THE LONDON COUNTY MENTAL HOSPITAL, WEST PARK.

*Report on Research Work.* Communicated by Dr. N. ROBERTS, O.B.E., D.P.M., Medical Superintendent.

A.—Original Investigations during the year 1933.

1. Dr. WM. McCARTAN.—*Treatment of Cases of Encephalitic Parkinsonism by means of Trypan Blue.* The patients did not appear to obtain any appreciable benefits from such treatment.



2. Dr. W. A. CALDWELL.—*Investigation of the Effect of Massive Doses of Alkali in Cases of Schizophrenia.* Negative results.

3. Dr. S. LE ROY SWITZER.—*Treatment of G.P.I. with Sulphur in Oil followed by Arsenical Preparations.* In his opinion, the results obtained appear more satisfactory than those obtained with malaria, but no publication will be made on the work until a sufficiently large number of cases has been treated. Up-to-date, 130 cases have been treated.

4. Dr. HARRIS and Dr. ASTLEY COOPER are carrying out some work in connection with *puerperal mental disorders* and *encephalitis lethargica* respectively.

#### B.—*Routine Laboratory Work.*

Urine : general examinations, 221 ; deposits, 225 ; sugar estimates, 277 ; stained smears, 44 ; cultures, 5 ; quantitative and qualitative, 284 ; T.B., 17. Blood : complete counts, Hg. est. and diff. counts, 91 ; R. and W. count only, 15 ; sugar curves, 12 ; urea content, 7 ; cholesterol content, 1 ; malaria films, 31 ; Widal reactions, 11 ; Van den Bergh's, 2 ; cultures, 1 ; fasting sugar, 5. Sputum : general, 21 ; T.B., 59 ; cultures, 9. Faeces : cultures, 57 ; sugar broth cultures, 57 ; occult blood, 23 ; T.B., 30 ; foreign bodies, 3 ; parasites, 5. Throat swabs : direct smears, 46 ; cultures, 44. Swabs (various) : direct smears, 10 ; cultures, 10. Skin scrapings : organisms, 35 ; cultures, 9. Test meals : fractional, 9. Vomits : blood acidity, etc., 7. Puncture fluids : organisms, cells, etc., 13. C.S.F. : cells, protein, globulin and urea, 4. Sections, 229. Autolysed yeast 1 oz. daily, 60. Hairs for organisms, 26. Post-mortem examinations, 58 (51 per cent. of deaths).

### XIX.—FROM THE CAMBRIDGESHIRE MENTAL HOSPITAL, FULBOURN, CAMBRIDGE.

*General Report.*—By Dr. H. TRAVERS JONES, D.P.M., Medical Superintendent.

#### A.—*Laboratory Work.*

The following is a summary of the investigations during the year :—

Total number of investigations, 446. From hospital, 257. From male and female admission block, 189. Bloods : T.A.B., 111 (5 positive to typhoid) ; Abortus, 2. Wassermann tests, 101 (positive, 10). Faeces : routine bacteriology, 97. Urines with cultures for *B. typhosus*, 99 (positive, 5). Water (hospital) : bacteriological examination, 2 samples. Throat swabs, 9. Sputa for T.B., 14.

Samples of the Hospital's milk and water were sent for bacteriological investigation for bacilli of the typhoid group. Both samples were negative.

#### B.—*Treatment of General Paralysis with Tryparsamide.*

Three male and two female general paralytics were treated during the year with Tryparsamide injections.

A.G.M., aged 63. Admitted March 4th, 1933. He was exalted, grandiose, said he was a great friend of Royalty, and offered presents of millions of pounds to the nurses. Wassermann reaction was positive in both blood and c.s.f. A course of ten intravenous injections of 3 grams of tryparsamide was given at weekly intervals from April 10th to June 14th.

There was no appreciable change in his condition until the end of October, when patient was physically improved somewhat, but was still euphoric. He has since regressed, and, in view of patient's age, there cannot be said to be much change.

C.W., aged 47. Admitted July 24th, 1933. He was demented, memory was impaired, and he was foolish and inconsequent in conversation. W.R. was positive in blood. A course of tryparsamide, 3 grams weekly was given for ten injections, from September 28th to November 30th.



Memory has improved, and behaviour is much more rational. There has been some improvement in his articulation, and he has gained 7 lbs. in weight.

A.P.G., aged 40. Admitted November 30th, 1933. He was demented, apathetic, disorientated in time, with impairment of memory; articulation was slurring. W.R. in blood and c.s.f. both positive. A course of ten intravenous injections of tryparsamide of 3 grams given at weekly intervals.

Patient has not improved much mentally, but his articulation is distinctly better. Another course of injections has just been started in this case.

C.E.D., aged 35. Admitted May 27th, 1931. This patient was stuporose, resistive, faulty in habits and subject to retention of urine. W.R. was positive. She was given a course of tryparsamide injections during 1932 and 1933, and at present is no longer stuporose. Habits are clean. Patient, however, still shows some dementia.

F.H., aged 54. Admitted September 7th, 1932. On admission she was very confused, and habits were faulty. W.R. positive. She was given courses during 1932 and 1933 of tryparsamide, and is now clean in habits, though feeble-minded and rather emotional, and the confusion is much less.

It is not claimed that any of these patients have been greatly improved, though there does appear to have been some arrest in the progress of the symptoms in all but the first case quoted.

## XX.—FROM THE JOINT COUNTIES MENTAL HOSPITAL, CARMARTHEN.

*Report on Laboratory Work.*—Communicated by the Medical Superintendent.

The following is a summary of routine laboratory work carried out during the last five months of the year 1933 :—

Urines: routine, 102; special tests, 56. Faeces: occult blood, 1; ova and cysts, 2. Blood: total counts, 13; differentials, 5; malarial films, 67; haemoglobin estimations, 5; Widal reactions, 465; sera tests, 3,400. Bacteriological: including examinations of faeces, urine, pus, etc., 12; cultures, 13. Sputum: examinations, 3. Water analyses: total tests, 48. Disinfectant: efficiency tests, 4. Histology: brain sections, cut and stained, 2. Post-mortems: 7.

## XXI.—FROM THE CHESHIRE COUNTY MENTAL HOSPITAL, CHESTER.

*Report of Laboratory Work.*—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory work carried out during the year :—

Urine examinations, 1,254; blood examinations for malarial parasites, 453; Wassermann tests, 198; sputum examinations, 34; Widal tests, 6; examinations of faeces, 193; blood counts, 45; examinations of swabs, 107; blood sugar estimations, 5; samples of milk analyzed, 82; miscellaneous: blood, urea, pus, vomit, etc., 17.

In five cases, autogenous vaccines were prepared.

## XXII.—FROM THE CHESHIRE COUNTY MENTAL HOSPITAL, MACCLESFIELD.

*Report of Laboratory Investigations.*—By Dr. H. STAFFORD, D.P.M.

The total number of investigations carried out in the pathological laboratory during the year 1933 was 2,902, as follows :—

Routine urine examinations, 1,702. Bacteriological examinations: urine, 36; faeces, 201; sputum, 47; pus, exudates, etc., 28. Preparation of autogenous vaccines, 5. Full blood counts, 5. Examinations of c.s.f., 10; blood films, 18. Chemical examinations of blood, 10. Tissue sections for microscopical examination, 169. Agglutination reactions of blood serum, 492. Wassermann reactions of blood and c.s.f., 179.



*Dysentery.*—During the early part of the year, the search for dysentery carriers was continued by a re-examination of the faeces of all the patients in the male ward which was chiefly affected in the epidemic of 1931; the results were completely negative, no pathogenic organisms being isolated from any specimen, and the only unusual finding was the occasional presence in primary cultures of a few colonies showing no lactose fermentation, subcultures from which, however, produced fermentation of this sugar only after a period varying from 5 to 10 days.

Only one case of dysentery occurred during the year; this was a male patient who had suffered from two previous attacks; stools were frequent and typically dysenteric for the first week of the disease, and the causative organism was isolatable with ease, proving to be *Bac. dysenteriae* Flexner, Type V. There were several cases in various parts of the hospital, and separated in time incidence, of diarrhoea of short duration with, at the onset, one or two stools of suspicious appearance, and with often a single record of pyrexia which was never higher than  $99.6^{\circ}\text{C}$ . No dysenteric organisms were isolated from any of these cases. Faeces submitted for examination on account of diarrhoea were much fewer than usual; the cultural findings in these cases were negative with the exception of a frequent overgrowth of streptococci and the occasional presence of *B. alkalescens* and *proteus vulgaris*.

*Enteric.*—There was a single case of enteric infection in a male patient in January, which proved fatal on the 27th day of illness following severe intestinal haemorrhage. Definite bacteriological diagnosis was not possible in spite of numerous investigations: repeated cultures of blood, urine and faeces were negative; the patient's serum on the 10th day gave only a partial agglutination of *B. typhosus* "H" at a dilution of 1 in 40 (2 hours at  $55^{\circ}\text{C}$ .), the same result on the 14th day, and no agglutination in dilutions from 1 in 20 upwards on the 20th day; the reactions to suspensions of *B. para-typhosus* A, *B. paratyphosus* B, *Salmonella* group, and *B. typhosus* "O" were negative on all occasions.

*Urinary infections.*—Acute urinary infections have been rather more frequent than in past years, particularly among the female patients. The organism incriminated has always been some variety of *B. coli*—*anaerogenes*, *commune*, *communis* or unclassified, usually haemolytic and often non-motile—and the cases for the most part have cleared up fairly quickly under treatment.

*Tuberculosis.*—There were only 2 fresh cases of tuberculous infection during the year, both pulmonary; one female patient suffering from the disease on admission, and an epileptic imbecile was diagnosed on examination of the faeces, no sputa being available.

The sera of 154 new admissions were examined for agglutination of *B. typhosus*, *B. paratyphosus* B, and *B. dysenteriae* Flexner Y. The dysentery organism was agglutinated in dilutions of 1 in 80 or over, in 6 hours at  $55^{\circ}\text{C}$ . by 29.2 per cent. *B. typhosus* and *B. paratyphosus* B. were *both* agglutinated in dilutions of 1 in 40 or over in 2 hours at  $55^{\circ}\text{C}$ . by 3.2 per cent., *B. typhosus only* by 3.9 per cent.; and *B. paratyphosus* B. *only* by 1.9 per cent. No carriers of these organisms were discovered on examination of the excreta of those cases showing any significant agglutinin content of the serum.

Of the new admissions during the year 12 male, and 6 female patients, gave positive Wassermann reactions in the blood serum—15.19 per cent. of the total male and 4.8 per cent. of the total female admissions; the corresponding figures for 1932 were 19.28 and 5.88 respectively.

In addition to the above investigations, the laboratory furnished reports on 121 specimens submitted or collected from various sources outside the Hospital.



## XXIII.—FROM THE CORNWALL COUNTY MENTAL HOSPITAL, BODMIN.

*Report of Laboratory Work.*—Communicated by the Medical Superintendent.

The following is a summary of the examinations made in the laboratory during the year :—

Urines: routine, 277; special, including bacteriological and diastatic index, 73. Faeces: bacteriological, 613; special reaction, 1. Blood: total counts, 8; differential, 9; sugar tolerance curve, 1; Van den Bergh reaction, 2; Widal reaction, 179; Wassermann reaction, 190; cultures, 6; diastatic index, 1. C.S.F.: complete examination (i.e., cell count, protein content, colloidal gold curve, Wassermann reaction) 13; bacteriological swabs and cultures, 16. Sputum examinations, 31.

## XXIV.—FROM THE DEVON COUNTY MENTAL HOSPITAL, EXMINSTER.

*Report of Clinical and Pathological Investigations.*—By Dr. R. EAGER, O.B.E., Medical Superintendent.

*Treatment of General Paralysis by Induced Malaria.*

During 1933, 10 cases of general paralysis were treated by induced malaria (9 males and 1 female).

5 cases were infected by mosquitoes.

4 cases were infected by blood from infective cases.

1 case was infected by Sporozoites suspended in defibrinated blood.

The average number of days taken for fever to develop was 20 days from mosquito infection, 14 days from blood infection and the case infected with sporozoites took 25 days. This makes the third case in which infection has been attempted by the means of sporozoites suspended in various fluids, and this is the only one in which the infection was conveyed.

*Infection effected by Sporozoites.*—As has been pointed out to us by Mr. Shute an entirely new field of research and technique is opened up in succeeding to infect a patient with malaria by sporozoites in suspension, and this may have far-reaching results.

At present two methods of infecting patients are in use :—

1. Direct blood inoculation from a patient who has the Plasmodium into a patient or patients awaiting malarial therapy.

2. Infection by the bites of infected mosquitoes.

It has been realized for a long time that the method by direct blood inoculation is open to serious objections; in some cases serious complications have arisen through contamination and other causes.

The method of infecting patients by the bites of infected mosquitoes fulfils practically all requirements, but it is quite impossible to send mosquitoes to infect every patient in all hospitals throughout the country.

If, as seems to be the case, we are going to be able successfully to put up solutions containing sporozoites it will be possible to concede to practically every request from all hospitals.

In the case reported above the sporozoites had been in suspension for a period of 5 days, but the inoculation was rather longer than is usual by direct mosquito bites and further experiments and trials are necessary in order to obviate this objection.

Further trials are therefore in progress in this direction.

The majority of cases undergoing malarial treatment become considerably debilitated, especially if the fever runs a quotidian course. Many of the patients complain of cramp in the limbs and herpes labialis frequently develops.

The temperature is at times difficult to control, and when sponging or the cold pack fail it has been noted that the hot pack induces the skin to act and the desired fall in temperature results.



There have been no cases of jaundice, syncopal attacks or pneumonia. The bihydrochloride salt of quinine is prescribed to terminate the infection and the patient is then given a liberal light diet and an iron tonic.

It is of interest to record that three of the cases treated submitted themselves at the Hospital for treatment as voluntary patients. As already mentioned in my previous reports we find that cases unfortunately arrive at this Hospital when the disease is already far advanced, so that when treatment is commenced all that can be hoped is that it may be arrested and modified. An improvement in this respect may be expected as a result of the Mental Treatment Act if patients can be persuaded to come for treatment voluntarily at a much earlier phase.

Of the cases treated during the year, 5 have derived material benefit and 2 of these have been discharged. It is too early to report on those remaining. In addition, 2 cases have been discharged who went through their treatment in 1932.

The total number of cases treated in this Hospital up to date is now 71; of these 27 have been discharged, i.e., 38 per cent., and only 4 of these have returned owing to deterioration. This is a striking contrast to the state of affairs 10 years ago, when, if the diagnosis of this disease was correct, all would have been expected to die within 3 years of admission, after a frequently prolonged bedridden stage which taxed nursing resources to their utmost.

#### *Laboratory Report.*

Once more the Hospital has been remarkably free from Infectious disease. There have been no cases of typhoid or dysentery; and the Hospital has now been free for several years from the former.

Routine examination of fæces were carried out on every case of diarrhoea which was accompanied with a rise of temperature. The dysentery bacillus was not found, but *B. Morgan* No. 1 was found in 4 cases, *B. Proteus* in 2, and *B. Alkaligenes* also in 2 cases.

A search was also made of the fæces by the Antiformin method in cases of suspected tuberculosis, when the sputum could not be obtained. This has yielded several successful results.

The chief interest in the laboratory during the past year has been in following up some experiments carried out under the supervision of Col. James, of the Ministry of Health, in connection with the prophylaxis in malaria by the use of Atebrin, Phenoquine and Quinine in the case of the Benign Tertian Fever in the autumn of 1932, and Atebrin, Plasmoquine and Quinine in the case of the malignant fever in the autumn of this year.

As regards the use of Atebrin, it is worth mentioning that we have found it liable to produce a yellow coloration of the skin, resembling jaundice. This is not accompanied by any hæmolysis, as shown by negative Van den Bergh reactions in each case in which the drug was given. This colour persists for some weeks after the administration of the drug is stopped, but so far as can be ascertained in the patients to whom it was administered no other objectionable symptoms were produced. The yellowness was also noticed in the urine, and chemical examination every few days showed that the drug was excreted in varying amounts for an indefinite period of up to three months, depending upon the amount of the drug which had been administered.

We also found that after administration of Atebrin had been stopped for 8 days the patient was easily infected with the Benign Tertian Parasite by mosquitoes. The fever developed 18 days after infection.

It seems, therefore, as if, at the present juncture, Atebrin is a reliable preventive of malaria, but cannot be taken over long periods without producing objectionable discoloration in the skin; and, if it is not continued, reinfection may easily result.



The following is a list of examinations made during the year 1933.

*Routine examinations.*—Urines (albumin, sugar, etc.), 1,922; sputum for tubercle bacillus and other organisms, 41; Blood: blood counts (red and white cells), 56, differential cell counts, 44, Haemoglobin estimation, 58; bacteriological examination of throat swabs, etc., 34; post-mortem examinations, 77. *Special examinations.*—Cultural examinations of faeces for organisms of the typhoid and dysentery groups, 30; microscopical sections, 47. Blood examinations: Wassermann reactions, 73, Kahn's flocculation tests, 85; malarial parasites: benign tertian experiment with Atebrin and Phenoquine, 95; sub-tertian experiment with Atebrin and Plasmoquine, 103, G.P.I. treatment with induced malaria, 62; agglutination tests for typhoid, 3; culture, 1; Van den Bergh, 8; urea, 41; sugar, 2; sugar tolerance tests, 12. C.S.F.: Wassermann, 23; Kahn flocculation tests, 8; Lange's colloidal gold reactions, 21; cell counts, 22; estimation of globulin (Pandy and Nonne Apelt) and protein, 22. Urine examinations: urea concentration tests, 3; sugar tolerance tests (urinary excretions), 7; urea excretion tests, 5; atebirin excretion tests, 180; for presence of tubercle bacillus, 1; culture, 1; diastatic index, 1. Faeces examination: occult blood, 7; presence of tubercle bacillus (antiformin method), 16. Gastric analysis, 5.

*Ultra Violet Light.*—Forty-seven cases (7 males, 40 females) received treatment during the year. In 2 cases the treatment was discontinued too early for the results to be estimated; of the remainder, all showed mental improvement and 34 physical improvement.

The majority of the cases showing physical improvement were suffering from general debility, but in one case of boils and another of tubercular peritonitis and 2 cases of chronic skin conditions (Acne, Rosacea, and Seborrhœa Capitis) considerable improvement was noticed.

The following table therefore presents the summary:

	Mental.			Physical.		
	F.	M.	Total.	F.	M.	Total.
Improved ... ..	10	1	11	29	5	34
No change ... ..	26	5	31	9	1	10
Worse ... ..	3	0	3	1	0	1
Discontinued ... ..	1	1	2	1	1	2
Totals ... ..	40	7	47	40	7	47

Two of the 3 cases who seemed to be made worse mentally were cases of Dementia Præcox, of whom one showed marked excitement and resistiveness. The other was a case of agitated melancholia. This treatment seemed to increase the agitation as we have found before in similar cases.

The case which deteriorated physically was a case of mania with considerable excitement and debility.

### *Surgical Department.*

In 3 cases of fracture of the femur the abduction method in plaster of Paris with Ord's Traction Apparatus was used, but early in December Smith Peterson's Method of exposing the site of the fracture by open operation and by the insertion of a steel peg into the neck of the bone was tried. The result obtained in this case was most satisfactory, the patient being able to get out of bed and walk with assistance about 3 weeks after the operation.

The nursing of the case, which has always been a troublesome feature previously, was thus considerably simplified, as the patient was able to move in bed within a few days of the operation.

Although it is yet too early to express any definite views, it would seem that this treatment holds out hope of being a great advance on former methods.



*Influenza—Sprays and Gargles.*—During the months of October to the end of March for the past 2 years a spray of “killgerm” has been used throughout all the wards and departments of this Hospital, and gargles night and morning of potassium chlorate and carbolic acid together with a mixture of quinine (gr. i doses) every other day.

Seeing that in 1931 we had 187 cases of influenza, of whom 16 were amongst the staff, and that in 1932 we had no cases, and only 5 this year, it seems as if this method has some prophylactic value.

*Antimalarial Chemotherapeutic Tests at the Devon Mental Hospital.*—By  
Col. S. P. JAMES, M.D., F.R.S.

In 1933, as in 1932, Dr. R. Eager, Medical Superintendent of the Devon Mental Hospital, Exminster, collaborated with Col. S. P. James, of the Ministry of Health, in conducting clinical therapeutic trials with several new synthetic antimalarial remedies which are being investigated on behalf of the Chemotherapy Committee of the Medical Research Council. A description of the aims and objects in view, together with an account of a carefully conducted trial of quinine, atabrin and phenoquine to compare their relative efficacy for “true causal prophylaxis” was published as an appendix to the Annual Report of the Hospital for 1932. Observation of the cases comprised in that test was continued throughout the year 1933, and the following conclusion can now be stated. In tertian malaria due to *P. vivax* neither quinine nor phenoquine administered in therapeutic doses on the day of infection by mosquito bites and for five subsequent days has any effect in preventing or delaying the onset of the malarial attack. In all the ten cases in which these drugs were tried, as well as in two control cases in which no drug was given, the malarial attack began between the tenth and fourteenth day after infection and developed in the normal manner. Atabrin, on the other hand, has a quite different effect. None of the five persons who took this drug on the day of infection by mosquito bites and for five subsequent days manifested any sign of malaria within the usual incubation period of the disease, and this freedom from attack continued during the remainder of the year. By continuing to observe them systematically during 1933, it was ascertained that what the drug had done was not to prevent the malarial attack by destroying all the organisms which the mosquitoes had injected (which is what a “true causal prophylactic” should do), but to postpone the onset of the attack far beyond the usual incubation period of the disease. The first patient in this group did not begin his malarial attack until 89 days had elapsed since infection and none of the remaining four began their attacks until 230 or more days had elapsed.

It goes without saying that the property possessed by atabrin (but not by quinine or phenoquine) of causing malaria to remain latent for some months could on occasion be utilised to serve a valuable practical purpose in naval and military operations, public works or other activities in which malarial attacks must be prevented during a critical period of relatively short duration. The importance of the finding from that point of view made it desirable to ascertain whether atabrin would have the same effect in infections with the other tertian parasite *P. falciparum* which prevails in the tropics, as it had been shown to possess with regard to the more widely distributed parasite *P. vivax*. Difficulties in preparing a supply of mosquitoes infected with the tropical species of parasite delayed arrangements for this test, but it was conducted successfully in the early part of December, the drugs used for comparison being quinine, atabrin and another synthetic preparation, namely plasmoquine, to replace phenoquine, which had been proved to be without effect in the previous test. As the trial was completed only a short time before the end of the year, the results will come for record when the cases have been observed during the first half of 1934.



The thanks of the Chemotherapy Committee of the Medical Research Council were conveyed to Dr. Eager for his valuable co-operation in arranging for the conduct of these clinical trials and to the members of his staff who, by the personal attention which they gave to all details of the trials, enabled results to be obtained which have added considerably to knowledge on the subject.

## XXV.—FROM THE DORSET COUNTY MENTAL HOSPITAL.

*Pathological Report.*—By Dr. P. W. BEDFORD, D.P.M., Medical Superintendent.

*Analysis of Pathological Investigations.*—During the year, 3,657 investigations were carried out in the laboratory, this being an increase of 133 on the previous year. Subjoined is a summary:—

Urine: routine examinations, 1,650; sugar estimations, 235; spectroscopic examinations, 47; albumen estimations, 26; urea estimations, 5; bacteriological examinations, 4. Blood: Meinicke's reaction, 160; Widal's, 151; sugar estimations, 44; bromine, 22; chloride, 23; urea, 7; bacteriological examinations, 6; Wassermann, 11; red and white cell count, 27; polynuclear count, 26; differential count, 7; sedimentation rate, 4; malaria examinations, 3. Vaccines prepared, 240; gastric juice examinations, 5. C.S.F.: chemical examinations, 36; gum mastic, 39; colloidal gold, 7; bi-coloured Guaiacum, 15; Meinicke reaction, 40; Wassermann, 30; bacteriological examinations: faeces, 660; gall bladder, 28; throat swabs, 31; water, 46; sewage, 2; pus, 8; pathological examinations, 12.

### *Typhoid.*

1. There were 2 fresh cases; one was in daily contact with known typhoid carriers in the isolation ward; in the other the source of infection was not discovered.

2. A vaccine was prepared and the whole female side inoculated.

### *Dysentery.*

1. There were 23 fresh cases; with one exception (B. Sonne) the causal organism was B. Flexner Z.

2. *Carriers.*—This term is retained to designate cases found excreting the causal organisms without symptoms, or history of symptoms. Five such carriers were found, one on admission (Sonne).

3. *Vaccination.*—The patients in a heavily infected ward were inoculated with a vaccine prepared from the original case. After a distinct negative lag, the rise in blood agglutinins was marked, but the degree of immunity afforded was slight.

### *Diphtheria.*

One new case appeared among the female staff. The source of infection was outside the Hospital.

### *Bromism.*

The bromide content of the blood was estimated in a small series of cases. Latent bromism appears to be a remote possibility. On average dosage (gr. 10 to gr. 15 t.d.s.) the blood bromide rose slowly to a figure between 100 and 150 m.g., where it remained constant for the individual case. On larger dosage (gr. 60 t.d.s.) signs of bromide intoxication appeared when the figure was below 100 m.g.

### *Water Chlorination.*

This has been carried on during the year. Fortnightly examinations of the water have taken place and on four occasions have organisms belonging to the B. Coli group been present.



*Epilepsy.*

(a) In two cases ketogenic diet was reinforced with acid salts. Although the incidence of fits was modified, the degree of improvement was temporary, and could not be maintained by increased dosage.

(b) The blood chloride was estimated in four epileptics under varying conditions of salt intake. There was no correlation between the chloride level and the incidence of fits.

*Neuro-Syphilis.*

There were 12 new cases.

*Tryparsamide Therapy.*—Fourteen patients received treatment. The drug is given in courses of 16 grams (2 grams weekly) and is continued with monthly intermissions until the c.s.f. is approximately negative. One patient complained of temporary dimness of vision, and one patient developed a gluteal abscess.

*Pyripher.*—In 11 cases, tryparsamide therapy was reinforced with pyrexia, induced by injections of pyripher, a bacillary preparation of proprietary German origin. This agent has given consistent rigors, with temperatures varying between 103° and 105°; there have been no untoward complications.

Two male patients, not suffering from neuro-syphilis (a young præcox and a paraphrenic) were treated with this preparation; there was no permanent benefit in either case.

*Results.*

(a) *Clinical.*—Six cases have been discharged, "Relieved"; 3 are improving; 4 show no improvement, and one died of intercurrent disease.

(b) *Serological.*—In all cases receiving treatment the serological signs were modified. The most constant change was a drop in the cell count, corresponding, in early cases, with mental improvement. Sustained treatment, in long-standing cases, profoundly modified the Wassermann reaction and colloidal curve, resulting in a quota of static demented, in whom the disease has been completely arrested.

*Bi-guaiac Test of C.S.F.*—This test is being tried out. It appears to avoid many of the difficulties of the Lange. The results approximate very closely to those of the gum mastic test, which is much simpler in execution.

## XXVI.—FROM THE GLAMORGAN COUNTY MENTAL HOSPITAL.

*General Report.*—By Dr. D. FINLAY, Medical Superintendent.

*Routine Laboratory Work.*

Urine examinations: males 1,191, females 990; blood counts, 5; differential blood counts, 7; throat swabs, 3; sputum analysis: males 9, females 5; urine T.B. analysis, 2 males; Faeces: males 5 (Flexner in two cases, 3 negative), females 1 (Flexner bacillus found); Wassermann reaction of blood, 87.

*Dysentery.*

All dysenteric cases were treated by injections of mixed antidysentery serum with good results. Suspected dysentery carriers were 3 in number, all of them males. Vaccination therapy was adopted in these cases.

*General Paralysis of the Insane.*

Four females were treated with tryparsamide. Three have improved clinically, 1 has died. One female was treated with an emulsion of Ducrey's bacillus, plus tryparsamide, a remission has been effected. One female treated with emulsion of Ducrey's bacillus only, subsequently died. Twelve males treated with tryparsamide; 8 showed no improvement; 2 of these subsequently died. Marked improvement in 2 cases—subsequently discharged. The remaining 2 cases are much improved in general appearance and behaviour.



*Psoriasis.*

The condition of a female treated by injections of tryparsamide has greatly improved. Originally the disease would not yield to several forms of treatment.

*Erysipelas.*

Three females have been successfully treated with a mixed Staphylococcal and Streptococcal preparation applied to the skin.

*Epilepsy.*

Prominal, a preparation of N-methyl-ethyl-phenyl-malonyl-urea, was tried in two cases; the results to date are not encouraging.

Nirvanol, a preparation of Phenylethylhydantoin, was administered in 6 cases; it was found to completely control the attacks in one of the cases, the results in the others being indifferent.

*Vitamins.*

Preparations rich in vitamins have been administered freely to patients throughout the Hospital. It is noted that in debilitated cases, almost without exception, marked physical improvement has been recorded in each case.

It is worthy of note that a pronounced improvement in the skin condition of an epileptic under treatment with potassium bromide and suffering acne was secured by administration of Adexolin (Vitamin A and D).

## XXVII.—FROM THE GLOUCESTER COUNTY MENTAL HOSPITAL.

*General Report.*—By Dr. F. C. LOGAN, Medical Superintendent.

*A.—Laboratory Work.*—(Dr. E. N. DAVEY, Pathologist).

The following pathological investigations were made during the year:—

Blood: calcium, 23; count, 27; sugar, 1; urea, 25; Wassermann, 222; Widal, 203; for parasites, 4. C.s.f. complete, 1; W.R. only, 1; faeces: bacteriological, 299; tubercle bacilli, 1; amoeba, 2; milk: count B. coli and fat, 48; tubercle bacilli, 3; pus, bacteriological, 1; smears, urethral, microscopic, 2; sputum, bacteriological, 1; tubercle bacilli only, 18; throat swab, bacteriological, 32; K.L.B., 19; vaginal discharge, bacteriological, 1. Urine: chemical, 258; bacteriological, 73; urea concentration, 2; tubercle bacilli, 1. Vaccines prepared, 18; tissues for microscopic examinations, 6.

*B.—Publication.*—By Dr. L. HAVILAND MINCHIN.

*The Factor of Hypoglycaemia in the Aetiology of Idiopathic Epilepsy.*

*Summary.*

1. Epilepsy is associated with a low fasting blood sugar.
2. The glucose tolerance curve in epilepsy shows the islets of Langerhans to be over-active.
3. Those drugs which are beneficial in epilepsy raise the blood sugar level (except bromides, which reduce the irritability of the cerebral cortex).
4. In the post-convulsive phase of epilepsy the immunity from fits is associated with a raised blood sugar.
5. Variations in the balance of the autonomic nervous system have little influence on the incidence of fits.
6. Natural recovery from epilepsy is associated with the onset of hypoinsulinism.

*Journal of Mental Science*, October, 1933.

*C.—Clinical Notes.*

One case (A.S., male, aged 68, admitted 31st July, 1916) of rodent ulcer of the nose of recent origin was treated by hypodermic injections (in the arms) of Pituitrin (1 c.c. daily) and Theelin ( $\frac{1}{2}$  c.c. every second



day) as described by Susman of Manchester, in *B.M.J.* of October 31st, 1931, but no change of diet was made and he continued to receive the ordinary amount of carbohydrates allowed in the ordinary diet.

Initial doses were followed by considerable reaction of the face lasting about ten days, almost amounting to an erysipelatoid condition. After 32 days of receiving these injections the patient became resistive and refused to have any more injections, and so treatment ceased because he declined to submit to any kind of treatment for his nose.

The ulcer gradually closed in and was completely healed one year after starting injections.

His Wassermann reaction was negative.

#### XXVIII.—FROM THE HAMPSHIRE COUNTY MENTAL HOSPITAL, FAREHAM.

*Pathological Report.*—By Dr. J. L. Jackson, Medical Superintendent.

Work performed in the laboratory during the year included the following :—

Bacteriological examination of faeces, 847; urine, special examinations, 73 (routine urine testing is performed in wards). Blood (including cell counts, etc., malarial films, agglutinations), 64; Wassermann reaction, blood and c.s.f., 41; sputa, 52; throat swabs, 28; histological examinations, 12; animal inoculations, 6; post-mortem examinations, 29.

*Typhoid and Dysentery.*—Search is being made throughout the Hospital for typhoid and dysentery carriers. One new typhoid carrier—a female—has been discovered during the year; and four carriers of *B. Morgan* No. 1. No cases of typhoid have occurred, but there was an outbreak of dysentery, due to *B. Flexner*, on the male side in March; there were no deaths. Three cases of dysentery with two deaths occurred in the children's block in November; from one of the cases which died *B. Morgan* No. 1 was isolated.

#### XXIX.—FROM THE HAMPSHIRE COUNTY MENTAL HOSPITAL, PARK PREWETT, BASINGSTOKE.

*Pathological Report.*—By Dr. V. LINDLEY CONNOLLY, M.C., D.P.M., Medical Superintendent.

##### A.—Laboratory Work.

The following is a summary of the work carried out in the Pathological Laboratory during the year :—

Urine: routine examinations, 817; sugar estimations, 20; microscopic examinations, 73; tests for ketone bodies, 11; Friedman's modification of Ascheim-Zondek test, 8. Blood: Meinicke clarification reactions, 108; total cell counts, 64; differential cell counts, 30; haemoglobin estimations, 35; sugar estimations, 3; malarial films, etc., 20; urea estimations, 7; sugar tolerance test, 1; Van den Bergh reactions, 2; agglutination tests, *B. dysenteriae* (Shiga, Flexner), 136; *B. enteritidis*, 11; *B. typhosus*, paratyphosus A and B, 6; *B. abortus* and *M. melitensis*, 9; *B. Morgan*, No. 1, 3. C.S.F.: chemical examinations, 37; cytological examinations, 37; colloidal gold reactions, 33; Meinicke clarification reactions, 32. Bacteriological examinations: urine, 9; faeces, 292; pus, 6; well, tap, rain water, 7; milk, 1; urethral discharge, 1; sputa, 46; throat swabs, 6; pleural fluids, 4; tooth swab, 1; skin scraping, 1; gastric contents, 2; blood, 1; sewage effluent, 2. Chemical examinations: water, 2; faeces, 5; milk, 2. Histological sections, 12. Animal inoculations 16. Preparation of vaccine, 1. Autopsies, 38 (40 per cent. of deaths).

##### B.—Investigation of the Blood and Cerebro-Spinal Fluid in General Paralysis after Malarial Treatment.

Fifteen cases were investigated and the main conclusions arrived at were :—

1. The Wassermann Reaction of both blood and c.s.f. almost always become negative as a result of malarial treatment provided a sufficient



time has elapsed. The minimum interval for negativity proved to be 11 months in this series.

2. This tendency to negativity also holds true for the other tests of the c.s.f. (Lange, Boltz, Protein, Cells), the only remaining abnormality being increased pressure.

3. The Meinicke Clarification Reaction is a more sensitive criterion of luetic infection and invariably remains positive. This applies to the c.s.f. as well as the blood.

4. The development of negative reactions does not necessarily connote a cure or remission.

#### C.—*Dysentery.*

A minor outbreak of bacillary dysentery occurred in September, 9 male and 14 female patients being affected. A Z strain of the B. Dysenteriae Flexner was isolated from the faeces of seven of the cases.

The conditions required before isolated patients were permitted to return to the general wards were:—

1. Disappearance of all clinical symptoms.
2. Four negative bacteriological reports of the faeces at weekly intervals.
3. A negative agglutination test.

The source of the infection was thought to be a carrier, and the following groups of patients were investigated with this in view:—

1. All patients and staff working in the kitchen.
2. Twenty women patients received from another hospital under contract.

3. All the patients in C Ward where the infection seemed to linger.

In all, 269 specimens of faeces were examined and 136 blood agglutination tests performed, but no carrier was discovered.

### XXX.—FROM THE HEREFORD COUNTY AND CITY MENTAL HOSPITAL, HEREFORD.

A.—*Pathological and Clinical Report.*—By Dr. G. W. T. H. FLEMING, D.P.M., Medical Superintendent.

During the 12 months ending 31st December, 1933, 2,592 examinations were made:—

Urine: routine chemical and microscopical, 384; improved benzidine test for blood (positive 23), 290; bacteriological for enteric group, 45; urea concentration tests, 6; sugar estimations, 4. Faeces: bacteriological examination for enteric group, 566; chemical, 4. Blood: Wassermann (Birmingham University), 28; Meinicke tests, 562; Widal tests, 138; cultures, 12; Schilling index, 104; polynuclear counts, 104; red and white cell counts, 4; sugar estimations, 9. C.S.F.: Meinicke, 5; gum mastic, 5; colloidal paraffin, 5; Pandy, 5; Nonne-Apelt, 5; Takata Ara, 4. Bacteriological examinations: water, 32; sewage, 3; throat swabs, 22; sputa and pus, 12; bile, 5; milk, 5; spleen, 3; liver, 3; appendix, 2. Bacterial antigen prepared, 200 c.c.; typhosus and paratyphosus B. vaccine prepared, 540 c.c.; autogenous vaccines, 2; absorption tests, 13; specimens for museum: human brains, 26; liver, 2; humerus, 1; pancreas, 1; appendix, 1; gall bladder, 1; hearts, 5; foetal specimens from general hospital, 2. Histological sections, 70.

Reports were furnished on 28 specimens submitted from sources outside the hospital.

#### *Typhoid Carriers.*

In addition to the routine examination of blood, faeces and urine from new admissions, systematic search has been continued throughout the year on both sides of the Hospital for carriers of enteric bacilli.

Examinations of dejecta from C. L., a patient in male ward No. 6 revealed him to be a faecal carrier of B. Paratyphosus B. Of a total of 15 specimens of faeces examined till now, 14 have yielded positive cultures of this organism. His blood serum agglutinated B. Paratyphosus B. specific to a dilution of 1 in 100. This man has a history of "epidemic



diarrhoea" in 1903, ten years after his admission to the Hospital. Since that illness he has suffered from recurring attacks of intestinal catarrh.

Until a year or two ago this patient regularly assisted on the farm, and in view of the facts that outbreaks of intestinal infections occurred during the period he was thus employed, it is possible that, had facilities been available and thorough investigations carried out on these occasions, the source of infection in at least one outbreak might have been traced to C. L. and milk found to have acted as the vehicle of infection.

The water supply cannot be freed from suspicion as it was liable to sewage pollution and is thus likely to have been an agency in conveying and spreading from a carrier or carriers enteric organisms, giving rise to outbreaks of disease, thus increasing the carrier population, all of whom remained undetected as such until the present investigation.

References by Reibmayr (1918) and Bumke (1925) to the occurrence of tonsillar carriers of *B. Paratyphosus B.* prompted bacteriological examination of the throats of carriers segregated in this Hospital. The results have so far been negative. No urinary carriers have as yet been discovered.

During the year a female carrier of *B. Paratyphosus B.* died. Bacteriological examination of the liver, bile and small intestine gave cultures of *B. Paratyphosus B.* in each instance. Cultures from the spleen, kidneys and appendix were negative. The gall bladder, which was thickened and adherent, contained 12 small faceted gall stones. From the centre of one of them scrapings were carefully made and sown into suitable media. Growths of *B. Paratyphosus B.* resulted.

Prophylactic inoculations of patients and staff have been carried out during the year. The vaccine, which was prepared in the laboratory from the Malton strain of *B. Typhosus* and our own strain of *B. Paratyphosus B.*, contains 1,000 millions *B. Typhosus* and 750 millions *B. Paratyphosus B.* per c.cm.

#### *Sewage Examination.*

Following the isolation in 1932 of *B. Typhosus* and *B. Paratyphosus B.* from sewage, further tests were carried out during the year. The technique employed was that described in the *B.M.J.*, March 11th, 1933.

#### *Water Examination.*

The water supplies have been subjected to standard bacteriological tests. During the year the supply derived from local springs was discontinued and the Corporation Waterworks now supply the full amount required.

#### *Dysentery.*

As in the previous year, no bacilli of Shiga, Flexner or Sonne types have been found.

Morgan's No. 1 bacillus was isolated from a male patient whose stools for three days contained much mucus. No rise of temperature was recorded, and his blood serum, tested at intervals after the attack, failed to agglutinate the homologous strain or stock suspensions.

This organism was also isolated during routine examinations of faeces from five other patients, all of whom had no symptoms of intestinal disturbance.

The following non-lactose fermenting organisms have been isolated from the faeces of patients:—

Morgan's No. 1 bacillus	...	...	...	...	6 patients
" " 10 "	...	...	...	...	4 "
" " 13a "	...	...	...	...	1 "
" " 14 "	...	...	...	...	8 "
Douglas and Colebrook's Group 8	...	...	...	...	2 "
Morgan and Ledingham's No. 14	...	...	...	...	1 "
" " " 15	...	...	...	...	1 "

Urine.

The improved test for blood in urine introduced by Ingham ("An Improved and Simplified Benzidine Test for Blood in Urine and other Clinical Material"—*Bio-chemical Journal*, 1932, Vol. xxvi. 1124) has been tried on 290 specimens and was found positive in 23 cases.

Presence of Syphilis amongst the Patients.

The examination of the sera for evidence of syphilis was carried out by the Meinicke macroscopical method. When positive results were obtained they were confirmed by a Wassermann test. The tests corresponded in 93 per cent. of cases.

Amongst the new admissions, 34 males were tested and 5 of these were found to be positive, i.e., 14.7 per cent. Of these, 3 were cases of general paralysis. Forty-three females yielded 3 positive, i.e., 7 per cent. One of these was a case of general paralysis.

Amongst the remaining patients resident in the Hospital, of 220 male patients, 20 gave a positive result, 9.1 per cent., and of 272 female patients, 9 gave a positive result, i.e., 3.3 per cent.

Histology.

Sections have been cut from the kidneys and livers of all cases coming to autopsy, in addition to various other organs.

The investigation of the case of Pick's disease and the "Webbed Brain" from 1932 it is hoped to carry out in 1934.

Pathological Museum.

Further specimens have been added to the Museum.

The Schilling Index and Polynuclear Counts after injection of a vaccine of Typhosus and Paratyphosus B.

Time.	Basophils.	Eosinophils.	Myelocytes.	Metalocytes.	Band Forms.	Polymorphs.	Lymphocytes.	Monocytes.	Neutrophils.					Weighted Mean.
									I.	II.	III.	IV.	V.	
CASE 1. 20 million in vaccine.														
Before injection at 12 noon.	1	—	—	—	—	76	18	5	10	41	43	6	—	2.45
1.5 p.m. ...	—	—	—	—	11	77	10	2	21	56	23	—	—	2.02
2.15 p.m. ...	—	1	—	—	13	77	9	—	37	44	19	—	—	1.82
3.15 p.m. ...	—	—	—	—	13	80	4	3	33	48	19	—	—	1.86
4.30 p.m. ...	2	—	—	—	24	70	2	2	45	41	4	—	—	1.69
Day after ...	—	1	—	—	8	69	13	9	37	48	15	—	—	1.78
CASE 2. Juvenile G.P.I.														
Normal ...	—	—	—	—	11	73	16	—	23	52	25	—	—	2.02
10.30 a.m....	imm	edia	tely	after	20	million								
	2	1	—	—	4	55	38	1	12	47	41	—	—	2.29
10.35 a.m. ...	—	—	—	—	4	64	22	10	23	51	26	—	—	2.03
10.40 a.m. ...	3	1	—	—	3	66	25	2	11	57	28	4	—	2.25
10.45 a.m. ...	1	2	—	—	3	56	28	10	13	52	33	2	—	2.24
10.50 a.m. ...	1	1	—	—	2	65	25	6	9	49	35	7	—	2.40
4.15 p.m. ...	imm	edia	tely	after	40	millions	+ 2	gm.	Try	pars	ami	de.		
	—	—	1	—	1	71	20	7	19	30	44	7	—	2.39
4.45 p.m. ...	1	—	—	—	2	72	19	6	17	40	38	5	—	2.31
6.30 p.m. ...	2	—	—	—	14	76	8	—	27	41	30	—	—	1.99
7.0 p.m. ...	—	1	1	—	5	90	2	1	25	46	26	3	—	2.07
8.0 p.m. ...	—	—	—	—	6	87	5	2	21	47	30	2	—	2.13
9.40 p.m. ...	—	—	—	—	7	87	6	1	31	40	25	4	—	2.02
24 days after	2	—	—	—	6	61	27	4	19	42	37	2	—	2.24



In neither of these examples is there any suggestion of a lymphocytosis ; in fact, they both show a very distinct lymphopenia.

The haemogram from a general paralytic who died from lobar pneumonia is interesting as showing a very severe shift to the left with the lowest weighted mean I have ever come across in some hundreds of counts.

Date.	Basophils.	Eosinophils.	Myelocytes.	Metalocytes.	Band Forms.	Polymorphs.	Lymphocytes.	Monocytes.	Neutrophils.					Weighted Mean.	
									I.	II.	III.	IV.	V.		
14/12/33	—	—	2	—	65	24	10	1	77	21	2	—	—	1.25	Prognosis very bad Died 2 hours afterwards
15/12/33	—	—	35	24	25	13	3	—	93	7	—	—	—	1.07	

A weighted mean of below 1.40 is almost always of grave import.

Blood films from all the carriers of typhoid and paratyphoid B. were examined, but nothing very characteristic was discovered. The average weighted mean of a group of ten carriers was 2.45. If 2 carriers of typhoid who had high means of 3.15 and 3.17 be disregarded, then the average for the other 8 is 2.28, which is distinctly low and is no doubt due to the chronic infection of the gall bladder.

Polynuclear Count and Schilling Index in a Fatal Case of Paratyphoid B.

Blood films were made from patients receiving intravenous injections of a vaccine made from the Malton strain of B. typhosus (for this we are indebted to Dr. Scott, of the Ministry of Health) and our own strain of B. paratyphosus B. These films were made immediately the injection had been given and at varying intervals afterwards. The blood from the case of paratyphoid B. was examined at intervals until she died.

Day of Disease.		Basophils.	Eosinophils.	Myelocytes.	Metalocytes.	Band Forms.	Polymorphs.	Lymphocytes.	Monocytes.	Neutrophils.					Weighted Mean.
										I.	II.	III.	IV.	V.	
2nd	...	—	—	4	—	24	59	12	3	51	47	2	—	—	1.51
3rd	...	—	1	—	—	28	56	11	4	59	41	—	—	—	1.41
4th	...	1	—	10	1	45	27	15	2	73	25	2	—	—	1.31
7th	...	—	—	8	—	43	33	14	—	73	27	—	—	—	1.27
8th	...	—	1	1	5	32	44	14	3	75	25	—	—	—	1.25
9th	...	—	—	—	6	45	42	5	2	83	17	—	—	—	1.17
12th	...	—	—	—	3	20	35	39	3	63	37	—	—	—	1.37
15th	...	—	—	—	—	28	36	32	4	78	22	—	—	—	1.22

Severe intestinal haemorrhage.  
Died.

This haemogram is interesting showing a severe “shift to the left” among the neutrophils, with a persistent eosinopenia and lymphopenia until the twelfth day when there was the beginning of a post-infective lymphocytosis with a rising weighted mean. Unfortunately the patient did not survive the haemorrhage.



B.—*The Chemotherapy of General Paralysis, with three Illustrative Cases.*—  
By Dr. R. PAKENHAM-WALSH.

In general paralysis a chemotherapeutic method will necessitate the destruction of the spirochaetes which have entered the nervous system. Since the usual antisyphilitic remedies used in the clinics are ineffective for this purpose, the chemotherapy of general paralysis implies the use of drugs that will more easily penetrate the haemato-encephalic barrier. The problem of the permeability of this barrier may be attacked by regarding it as a dialysing membrane. Such a membrane would only be permeable to molecules below a certain size. It must be remembered, however, that alterations in permeability may be due to

- (1) alterations in the membrane, or
- (2) alterations in the material presented to it from either side.

Therapeutic malaria and probably other induced pyrexial methods may increase the permeability of this membrane to drugs. Owing to the danger, discomfort and anxiety caused by these methods, it is preferable to choose preparations which will penetrate the membranes under normal conditions. It is well known that certain pentavalent organic arsenicals have this property, and Hanzlik has shown that pentavalent bismuth in the form of sodium iodobismuthite (a constituent of "iodobismitol") has the power of penetrating into the nervous system after intramuscular injection. Although it would at first appear that valency is the determining factor in the choice of a suitable chemotherapeutic drug for the treatment of general paralysis, there are other factors to be considered. For instance, the diffusion of the drug from the blood into the more alkaline cerebrospinal fluid may be influenced by the nature of its electrolytes when in solution, but the influence of these electrolytes on diffusion is primarily determined by their reactions with the proteins of the blood plasma. The formation of a protein absorption complex or proteinate would prevent the passage of the drug through the membrane under normal circumstances. Strandberg, summing up the action of Iodobismitol, states that clinical and theoretical grounds exist for the belief that bismuth in anionic form is not so bound, but that it is in a form which facilitates penetration of tissues generally, including the central nervous system. The same explanation may be applied to the relative penetrating powers of the arsphenamines since Pomaret has shown that 606 and 914 can form protein-arsenophenolic absorption complexes. The actual complex which might be formed in vivo during clinical treatment would probably be formed from the reaction of the basic  $\text{—NH}_2$  group of the arsphenamine with the  $\text{—COOH}$  group of the serum protein. Loeb points out that on the alkaline side of the isoelectric point only the  $\text{—COOH}$  group of the protein exists in a chemically active form, and this state of equilibrium applies to the proteins in the blood serum. This hypothesis is supported by clinical and experimental evidence that substitution of the  $\text{—NH}_2$  group, which is attached directly to the benzene ring, alters the penetrating properties of an aromatic organic arsenical, whether pentavalent or trivalent. Of the pentavalent arsenicals used in (5), the treatment of infection with *Trypanosoma gambiense*, Tryparsamide and Fourneau 270 give good results in the second stage when Atoxyl is of little value. The evidence is more convincing in the case of the trivalent compounds since Voegtlin states that after intravenous injection, Sulpharsenobenzene kills trypanosomes in the cerebro-spinal fluid of rabbits more powerfully than even massive doses of Novarsenobenzene. Although these two substances are very similar, the acidic nature of the former and the unsubstituted  $\text{—NH}_2$  group of the latter might account for the dissimilarity of their biophysical properties. Promising results from the treatment of a general paralytic with Sulpharsenobenzene may supply further evidence to support these ideas. It is not suggested, however, that substitution of the  $\text{—NH}_2$  group is the only



factor which enables an organic arsenical compound to pass the haemato-encephalic barrier. Voegtlin's suggestion that "the optimum of chemotherapeutic action is determined by the optimum of physico-chemical properties" is still valid, and the penetrating powers of these preparations should be considered in relation to the structure of the whole molecule as well as to the constitution of its side chains.

Three male cases have undergone new methods of chemotherapeutic treatment during the last year.

The first case was demented on admission. He had grandiose delusions but was too confused to give a graphic description of them. He was given intramuscular and then intravenous tryparsamide in 2 gram doses each week for forty weeks, only one week having been omitted. On six occasions the solution was mixed with a vaccine prepared from B. Typhosus and B. Paratyphosus B. in the proportion of four to three. Twenty million bacilli were given in the first mixture and a temperature of 103.8 was recorded. The subsequent doses were larger and six satisfactory rigors in all were obtained. Blood films were taken during the rigors, the records of which have been described. The pyrexial treatment eventually had to be terminated owing to the lowering of the patient's resistance. The tryparsamide treatment was continued and given concurrently with Iodobismitol injections which were generally given in 2 c.c. doses on alternate days. Actually 61 c.c. were given during ten weeks. It is important to note that two such potent drugs as Tryparsamide and Iodobismitol could be given together without producing toxic symptoms. The next case, however, which received almost identical treatment, developed a dermatitis around the sites of the bismuth injections.

The second case received pyrexial treatment combined with Tryparsamide, but the typhoid vaccine injections had to be discontinued after the fourth induced rigor. This was followed by Tryparsamide combined with Iodobismitol as above, but the latter had to be stopped on account of the complication already described. He eventually died of pneumonia which was superimposed on a chronic chest condition originally produced by war gas. During four months he had received a total of 34 grams of Tryparsamide, four induced pyrexias, and 29 c.c. of Iodobismitol.

The third case has received Iodobismitol throughout. The patient still objects very strongly to the injections and complains of burning pains. He only becomes amiable when a rest period is given.

All three cases have shown mental improvement. The second and third cases have done useful work in the occupation therapy department and even the dement is now having a course of re-educational exercises. Serological changes have been shown in the second and third cases, and changes towards the normal, although slight, have been progressive with successive lumbar punctures.

It is concluded that rigorous chemotherapy, either with or without the aid of induced pyrexia, is efficient in the treatment of general paralysis. The advantage of chemotherapy is that it is the safest method available and the patients may be usefully employed within a few weeks of admission.

Work on these lines is being extended.

#### XXXI.—FROM THE HERTS COUNTY MENTAL HOSPITAL, ST. ALBANS.

*Laboratory Report.*—By Dr. W. J. T. KIMBER, D.P.M., Medical Superintendent, and Dr. A. M. McGRATH, Pathologist.

The following tests have been carried out for the Hospital during the year :—

Urines : sugar qualitative, 136; acetone, 32; albumen, 68; microscopy, 66; routine, 286; cultures, 4; quantitative sugar, 139; bile, 4; urea, 2; blood, 5; T.B. microscopy, 3; animal inoculation for T.B., 1; reaction, 5. Blood : full count, 43; haemoglobin, and R.B.C. (no differential), 13; W.B.C. and differential, 9; urea, 9; W.R., 278; malaria, 32; sugar single, 4; full curve, 2; Widal, 1. C.S.F. : W.R., 24;



routine, 24. Sputa: T.B., 10. Stool: T.B., 32; culture, 21; blood (occult), 4; worms, 1. Vomit: blood, 1. Swabs: K.L.B., 7; others, 1. Sections: 6. Vaccines: 5. Cultures: tonsils, 6. Milk: Grade "A", 41; T.B., 1. Water: bacteriological, 10; chemical, 1. Lavage washings: culture, 1. Test meals: 4. Fluids: culture, 2. Cervical swab: cultures, 2. Autopsies: 37 (71 per cent. of deaths).

Percentage of cases in which the Hospital milk reached Grade "A" standard at the routine monthly examination of the milk equals 68 per cent.

Summary of work undertaken for Cell Barnes Mental Deficiency Colony during the year:—

Blood: W.B.C. and differential, 1; Widal, 1; W.R., 210. C.S.F.: W.R., 1. Faeces: culture Widal, 2.

Summary of work undertaken for the County Medical Officer of Health and other outside Authorities:—

Urines: T.B., 8; microscopy, 17; microscopy and culture, 68; microscopy, culture and T.B., 22; urea, 54; sugar percentage, 2; animal inoculation, 2; diastase, 1. Blood: W.B.C. and differential, 9; full count, 54; haemoglobin, R.B.C., C.I. and W.B.C., 23; differential, 2; culture, 15; sugar, 30; urea, 51; W.R., 69; Widal, 23; calcium, 2; Van den Bergh, 1; N.P.N., 1. Pleural fluid: T.B. and culture, 17; T.B., 2. C.S.F.: routine, 2; culture, 10. Pus: 20. Sputa: T.B., 1,096; other organisms, 3; asbestos bodies, 1. Test meals: 4. Throat swabs: K.L.B., 406; haemolytic strepts., 122. Nasal swabs: K.L.B., 63; haemolytic strepts., 7. Cervical swabs: culture, 21. Cervical smears: G.c., etc., 23. Hairs: Ringworm, 2. Sections: 17. Milk: Grade "A" 74; certified, 3; pasteurized, 2; T.B., 80; animal inoculation, 4; abortus, 1. Faeces: T.B., 4; culture, 5; blood, 4; microscopy, 2. Water: chemical, 27; bacteriological, 20. Bile: 1. Cows' blood: agglutination, 2. Testicle fluid: culture, 1. Eye discharge: culture, 1. Fluid: culture ankle joint, 2. Tinned tongue: culture, 1. Pus from pig's throat: T.B., 1. Ear swabs: K.L.B., 2.

Sputa percentage positive, 20 per cent; K.L.B., 17.7 per cent.; Grade "A" milk, 82 per cent. conformed to the standard. Swabs positive for Haemolytic Strepts., 17 per cent.

The work done for outside authorities has shown a steady increase, especially in the number of K.L.B. swabs and water supplies examined on behalf of Local Authorities.

## XXXII.—FROM THE LINCOLNSHIRE COUNTY MENTAL HOSPITAL, BRACEBRIDGE.

*Laboratory Report.*—By Dr. J. MACARTHUR, D.P.M., Medical Superintendent.

*Routine Laboratory Work.*—Work commenced in the laboratory attached to our new Admission Hospital in August, 1933, and the following is a summary of the examinations carried out there during the remainder of the year:—

Urines: routine, 172; urea estimations, 6; sugar estimations, 12; bacteriological examinations, 17. Sputum: examinations for T.B., 3. C.S.F.: complete examinations including Nonne-Apelt reaction, Protein content and colloidal gold reaction, 7. Blood: counts and films, 6. Faeces: bacteriological examinations, 7. Histological examinations of tissues: 30 sections. Specimens: preserved and mounted, 3.

In view of the recent outbreak of paratyphoid fever at this Hospital in which 14 proved cases occurred between October, 1932, and June, 1933, the Widal reaction of the blood of all new admissions is now ascertained as a routine measure.

Of the 107 specimens examined, 6 were found to be positive, but every case except one was found to have had, at some time, a prophylactic inoculation of T.A.B.

The stools of patients and staff who contracted paratyphoid during the last epidemic are being systematically examined and one carrier—a patient—has been detected.



XXXIII.—FROM THE KESTIVEN AND SOKE OF PETERBOROUGH MENTAL HOSPITAL, RAUCEBY, SLEAFORD.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of the investigations carried out during the year :—

C.S.F.: Wassermann, Lange, cells and protein, 8. Blood: Wassermann, 50; Widal, 59; malarial films, 10; sugar, 3; counts, 8; urea, 1. Bacteriological: faeces, 5; sputum, 5; swabs, 5; pleural fluid, 2. Tissues: histological, 4. Urines: general, 627; microscopic, 12. Test meals, 2. Post-mortem examinations, 39 (74 per cent. of deaths).

XXXIV.—FROM THE MIDDLESEX COUNTY MENTAL HOSPITAL, UPPER TOOTING, S.W.17.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory investigations made during the year :—

Urines: routine, 374. Blood: total counts, 350; white cell counts and differentials, 8; red cell counts and haemoglobin, 1; malarial films, 39; glucose tolerance curves, 15; Kahns, 73; sedimentation rates, 9. C.S.F.: complete examination (cell count, Pandy, Nonne-Apelt, albumin, gold curve and chlorides), 61; Kahns, 16; urea estimation, 1. Bacteriology: faeces, 8; urine, 8; pus, 9; cultures, 27; sugars, 1; throat swabs for K.L.B., 2; sputum for T.B., 24; blood cultures, 1; vaccines, 1; agglutinations (12 organisms), 8; Mantoux test, 1. Biochemistry: fractional test meals, 4; special investigations, 2. Histology: brain sections, 3; other sections, 32. Post-mortem examinations, 72 (62 per cent. of deaths).

XXXV.—FROM THE MIDDLESEX COUNTY MENTAL HOSPITAL, NAPSURY.

*General Report.*—By Dr. A. O'NEILL, O.B.E., Medical Superintendent.

*Routine Laboratory Work.*—The following is a summary of the investigations carried out in the laboratory during the year :—

Routine examination of urine of all new admissions, 622. Bacteriological: intestinal cultures, 17; urinary cultures, 15; blood cultures, 1; pleural fluid cultures 6; joint fluid cultures, 4; throat swabs, 1; sputa, 34; faeces for T.B., 9. Biochemical: non-protein nitrogen, 1. Serological: Widal's, 2. Wassermann's (blood): 428, of these, 22 males and 8 females gave positive reactions. Wassermann's (c.s.f.): 23; colloidal gold test, 26; globulin estimation, 24; cell count, 24; blood counts (complete), 26; sections cut, 242; additions to museum, 16; X-rays, 80 (including dental). Post-mortems, 142 (91 per cent. of deaths).

*Pellagra.*

Three cases of pellagra occurred at this hospital last autumn. All the patients had typical pigmentation on wrists and face, diarrhoea, irregular pyrexia and general weakness.

One of the cases (B.S.L., admitted 18-2-33) also showed signs of Addison's disease, having, in addition, buccal pigmentation and a very low blood pressure. This case became very ill indeed but improved rapidly on marmite, yeast and daily injections of cortical extract.

The other two patients (A.S., admitted 12-12-30; G.A.S., admitted 30-6-33) were treated by marmite only, and both recovered. No mental improvement occurred in any of the cases.

It is interesting to note that although the mental state of these patients was very bad they had had a full diet of milk, eggs, etc., and had not refused their food.

No case of pellagra has been reported from the hospital for some years and it is noteworthy that these three followed an exceptionally hot summer.

*Treatment of General Paralysis.*

At this hospital general paralysis has been treated now for some years by intravenous injections of T.A.B. and N.A.B. A satisfactory fever is obtained by this form of treatment and no ill-effects have been noted. It is, however, considered that dangerous symptoms might arise if patients suffering from serious heart diseases were so treated.

A total number treated in this way, up to date, is as under :—

Total number of cases treated	...	...	...	48
Discharged recovered	...	...	...	10
Discharged (on petition) relieved	...	...	...	2
Still in Hospital	...	...	...	10
Dead	...	...	...	26
Total number showing remissions	...	...	...	28

## XXXVI.—FROM THE MONMOUTH COUNTY MENTAL HOSPITAL.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory examinations during the year :—

Urines: routine, 850; sugar estimations, 23; microscopical, 34; estimation of P.h., 15. Blood: total counts, 10; differentials, 10; blood films, 16; malarial films, 66; blood sugars, 5. C.S.F.: complete examination including Nonne-Apelt, Pandy and Noguchi reactions, 20; protein content and colloidal gold reactions, 20. Bacteriological: including examination of faeces, 290; urines, 6; pus, 8; cultures, sugar, reactions, 268; agglutinations, 64; throat swabs, 1; sputum examinations, 10. Post-mortem examinations, 59 (90 per cent. of deaths).

## XXXVII.—FROM THE NORTHAMPTON COUNTY MENTAL HOSPITAL.

*General Report.*—By Dr. F. J. STUART, O.B.E., Medical Superintendent.

No special research in treatment was undertaken during the year.

An enquiry into the family history of certain cases of Huntington's chorea is being carried out, but is as yet incomplete.

*Laboratory Work.*

In the laboratory during 1933, 1,440 specimens were examined, 301 of these were routine chemical examinations of urine; 952 specimens of faeces and urine were investigated for the enteric group of organisms. Samples of water, sewage and milk for contaminating organisms totalled 36 specimens; 122 blood samples were examined, 82 of these being Dryer tests, and the remainder were examined by a Kahn test and for the presence of micro-organisms.

## XXXVIII.—FROM THE NOTTINGHAMSHIRE COUNTY MENTAL HOSPITAL, RADCLIFFE-ON-TRENT.

*General Report.*—By Dr. H. C. WALDO, Medical Superintendent.

*A.—Clinical Investigations.*

*General Paralysis of the Insane.*—The malaria treatment of general paralysis of the insane was continued, 3 cases being treated. Tryparamide was given in conjunction with the malaria in most of the cases. The results are summarised below.

Number of new cases :—					Male.	Female.
Treated	...	...	...	...	2	1
Discharged	...	...	...	...	1	0
Improved	...	...	...	...	1	0
No change	...	...	...	...	0	1



*Out-Patient Clinic.*

In collaboration with the City Mental Hospital and The Coppice, a psychiatric out-patient clinic has been started in connection with the Nottingham General Hospital.

*B.—A Statistical Analysis of Puerperal Psychoses to determine the influence of Mitral Disease on their Prognosis.*

(Basis of a paper read before the Nottingham Medico-Chirurgical Society, 14-3-34, by Dr. H. A. PALMER, M.R.C.P., D.P.M., Assistant Medical Officer.)

There were admitted into the County Mental Hospital, Radcliffe-on-Trent, between 1st January, 1924, and 31st December, 1933, 965 female patients, of whom 49 were cases of insanity in relation to pregnancy, parturition, or the puerperium, i.e., 5 per cent. The general recovery rate for all cases was 25·5 per cent.

Of these 49 cases, 2 cases were transferred to other authorities and have subsequently recovered. Of the remaining 47 cases, 27 were discharged relieved or recovered, leaving 20 cases. Of these 20 cases, 7 died after an average stay in hospital of 7·4 months, leaving 13 cases still in hospital. That is to say, 59 per cent. of cases recovered. These 29 cases remained in hospital an average of 8·2 months. Subtracting from 49, 4 cases admitted within the last 8·2 months, we obtain 45 cases, of which 29, or 64 per cent., recovered, i.e., the probable recovery rate was 64 per cent.

Of this 64 per cent or 29 cases, 25 per cent. recovered within 4 months, 50 per cent. within 6 months, 75 per cent. within 12 months, whilst the longest recovery period was 24 months.

The average age of the total 49 cases was 29 years, and of the 25 recovered cases 29 years.

It has been suggested that the presence of mitral disease might affect unfavourably the prognosis of these cases. If this were so, it might be expected to find an unduly large proportion of patients remaining in hospital had heart disease, or that those patients having heart disease took longer to recover. An investigation along these lines yielded entirely negative results, since of the 15 cases remaining in hospital, only one had mitral disease, whereas within the last three years alone 3 cases with well-marked mitral disease recovered, one in 4 months, another in 15 months, and another within two years.

In order to confirm these results, and with the kind permission of the Medical Superintendents of the City Mental Hospital, Nottingham, and the Lincolnshire (Bracebridge) Mental Hospital, the statistics referring to a further 25 cases of puerperal psychoses remaining in hospital were examined, and out of these only 2 cases who showed signs of mitral disease were discovered, and of these 2 cases, one case had developed her signs whilst in hospital, quite recently. It would appear, therefore, that on the basis of these very limited observations, no evidence could be found to support the hypothesis that mitral disease interfered with the patient's likelihood of recovery.

*Cardiac Psychoses.*—An attempt is being made to collect together all admissions in which heart failure dominates the clinical picture as a parallel line of investigation to that outlined above. Only cases dying and found to be possessed of cardiac lesions primarily causing death are included. When this series is large enough to make publication worth while, they will be reported on.



## XXXIX.—FROM THE OXFORD COUNTY AND CITY MENTAL HOSPITAL.

*General Report.*—By Dr. T. S. GOOD, O.B.E., Medical Superintendent.

A.—*Routine Examinations.*

Urine, 1,738; blood, 117; c.s.f., 114; sputum, 29; faeces, 17; microscopical sections, 201; post-mortem examinations, 44.

B.—*Research.*

*Encephalitis Lethargica.*—A case of cretinism combined with typical chronic encephalitis lethargica has been histologically examined in detail. This combination, very rare in itself, presented also a very unusual clinical feature: a hyperpyrexia of  $106.4^{\circ}$  F. with a sudden onset which brought the patient, aet. 18, ad exitum. A previous attack, about a month earlier, with a sudden rise of temperature, not accountable for by other clinical symptoms, had occurred. Except for an acute hyperaemia of the lungs, the post-mortem findings regarding the inner organs were almost negative and bore out the clinical diagnosis of a centrally caused hyperthermia which has been described in the literature as a rare feature of chronic encephalitis. The appearance of the patient, who was in a state of extreme emaciation, was that of a boy of about 12 years of age. The glands with internal secretion were hypoplastic to a marked degree. The macroscopic and microscopic aspect of the brain showed features of early arrested development. Fresh punctiform haemorrhages in pons and basal ganglia testified to an "intermittent progression" which caused the death of the patient. An attempt to preserve the virus was made and it is proposed to report about the results of animal experimentation with the latter in due course. We are continuing to direct our attention to clinical and anatomical changes which show features resembling encephalitis lethargica and their relations to so-called influenzal affections with mental symptoms.

*Cerebro-spinal fluid.*—Earlier researches with emulsions of brain with cerebro-spinal fluid (K.O. Newman: *Zeitschrift für die gesamte Neurologie und Psychiatrie*, 140. Band, 1. und 2. Heft) were continued and the cortex of the temporal lobe examined by a method described in the aforementioned paper. Emulsions in physiological saline solutions and in cerebro-spinal fluid were made. Whereas the former "surface-tension profiles" were quite irregular, the latter showed a definite configuration which tallied in different specimens. The average values of surface-tension of the three gyri gave almost parallel curves on comparison with similarly treated brains. Sudden falls in the "surface-tension profiles" seem suggestive of possible functional significance. A histological examination of the different areas is carried out at the same time.

C.—*Publications.*

1. THOS. S. GOOD: "Modern Methods of Treatment: Psychological Medicine." *The Practitioner*, October, 1933.

2. K. O. NEWMAN: "Experimentelle Beobachtungen an normalen und pathologischem Liquor cerebro-spinalis." *Zeitschrift für die gesamte Neurologie und Psychiatrie*, 140. Band, 1. und 2. Heft.

## XL.—FROM THE SHROPSHIRE COUNTY MENTAL HOSPITAL.

*Laboratory Report.*—By Dr. HUGOE MATTHEWS, Pathologist.

The following work has been done during the year:—

(a) *Medical.*—Faeces examinations, routine, 138. Cultures: blood, 2; urine, 2; pleural fluid, 1; sputum, 12. Complement fixation, human T.B., 2; tuberculin reaction, human, 2; Widal's, 8. Blood: Wassermann, 12, Sachs-Georgi, 7. C.s.f.: (full examinations, including colloidal gold), 12; growth of material for vaccines, 9; post-mortem specimens sectioned and examined, 3; ante-mortem specimens sectioned,



1. (b) *Veterinary*.—Fortnightly milk tests, sediment for T.B., 24; quarterly milk tests, biological for T.B., 3; complement fixation tests, bovine T.B. (whole herd), 3 complete investigations. Miscellaneous examinations on farm animals, including search for *Johnes bacillus*, post-mortem examinations on cattle, poultry, etc., 15.

#### *Points of Interest.*

Some work has been done on the maintenance of tuberculosis-free milk. The work is too young, as yet, to formulate any definite views on the subject, but several interesting queries are beginning to emerge. The few facts are as follows:—

1. An attempt at maintaining a herd of cows negative to the intra-dermal test was being made.

2. A study was made of the complement fixation reaction against bovine T.B. organisms: approximately 50 per cent. of the animals which reacted to the intra-dermal did not react to the complement fixation test.

3. Fortnightly tests of milks were undertaken, grouping only samples from four cows. Centrifuging and staining method was used.

4. Quarterly biological tests of similar groups were undertaken.

5. Cows failing the intra-dermal were not slaughtered, but watched very carefully. Sixteen cows failed the intra-dermal test; of these, 7 failed the complement fixation test also. Of the latter number, 4 cows began to pass tubercle bacilli in the milk, 15 months, 14 months, 10 months and 8 months respectively after the failure of the intra-dermal test. The animals were slaughtered, and diagnosis of tuberculosis infection confirmed.

6. The remainder of the intra-dermal failures (9) are still giving milk free from tuberculosis. One reacted to the intra-dermal test 22 months ago, five 16 months ago, two 14 months ago, and one 13 months ago.

The queries that seem to be shaping themselves are:—

1. Is the intra-dermal test necessary when T.B. free *milk* is aimed at as opposed to a T.B. free *herd*?

2. Are not animals prone to be killed too early, including some which are immune, thus causing uneconomic premature slaughter?

3. In an institution, the population of which is nearly all adult, is not the safeguard of regular fortnightly sediment tests in *small* groups, with occasional biological tests as controls, adequate precaution?

#### XLI.—FROM THE SOMERSET COUNTY MENTAL HOSPITAL, WELLS.

*Report on Laboratory Work.*—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory work carried out during the year:—

Bacillus T. para A, para B. Widal's, 450; faeces (for occult blood), 2; gastric analysis, 2; blood counts, 3; blood tests (for bile), 2; urine tests, 1,020; sputum tests, 6; throat swabs, 5; stool cultures (typhoid and dysentery), 6; throat swab (slide), 2; Wassermann's, 135.

#### XLII.—FROM THE STAFFORD COUNTY MENTAL HOSPITAL, STAFFORD.

*General Report.*—By Dr. B. H. SHAW, Medical Superintendent.

*The Lecithin and Cholesterol content of the Blood in certain states of Mental Disorder.*

Further study of the lecithin and cholesterol content of the blood in certain states of mental disorder has been in progress and the oxygen content of the blood was estimated in order to arrive at the coefficient of utilization of the various cases. Schizophrenic, melancholic and confusional conditions were selected and the blood serum examined for a substance after the nature of choline, which has a marked depressor effect on the isolated frog's heart.



*Summary of Results.*

The lecithin content of blood shows no variation from normal. The cholesterol content in early dementia praecox is decreased by about 25 per cent. Later there is an increase of about 30 per cent. as chronicity advances and it remains at that figure. In melancholia and confusional states the blood cholesterol is slightly on the high side, but the variations are small. The coefficient of utilization is very low in these groups. Recurrent mania cases show a very high blood cholesterol, particularly during an acute attack, and the coefficient of utilization in these cases is very high.

There exists in the blood of certain melancholic and confusional states a powerful depressor substance having a choline-like action on the isolated frog's heart. This substance is antagonized by adrenalin. Normally this depressor substance is in such small concentration as to be almost undetectable. In schizophrenic and manic depressive states more or less normal tracings are recorded by the physiologic test.

Choline added to active serum disappears on standing after a few hours at laboratory temperature but this does not occur if the serum is inactivated by heat, showing that some substance having the property of an enzyme is destroyed by inactivation. This substance may be conveniently termed cholinase. It would appear, therefore, that in certain states there is a deficiency or complete absence of this substance.

Further work on the action of certain coliform organisms on cholesterol was carried out. An attempt was made to imitate the conditions prevailing normally in the small intestine. The various mixtures were incubated for three days at 37° C. It was found that in every case the melting point of the extracted cholesterol was very much lower than that of the original cholesterol added—the final melting point being similar to that of coprosterol. It has been shown that while cholesterol is readily absorbed again from the intestine this is not the case with coprosterol. Consequently in bacterial invasion of the upper intestine to an abnormal degree considerably less reabsorption of cholesterol will result.

*Routine Laboratory Work.*

In addition to the numerous reactions undertaken in special investigations during 1933, the following might be instanced as of a routine nature :—

Blood cholesterol estimations, 30 ; Wassermanns, 193 ; gold colloid tests, 11 ; haemoglobin and color index calculations, 76 ; blood counts, 97 ; halometer readings, 44 ; cultures various, 9 ; sputums for tuberculosis, 48 ; faeces for tuberculosis, 14 ; microscopic examination of faeces, 11 ; autogenous vaccines, 2 ; sugar estimations in urine, 164 ; microscopic examinations of urine sediments, 285 ; routine urine tests, 4,035 ; alkaloid estimations, 4 ; pathological sections, 35.

A paper entitled "*Some observations on Lipoid Metabolism in Mental Disorder*," embodying research undertaken, was read by Dr. Sharpe at the meeting of the Northern and Midland Division of the Royal Medico-Psychological Association held at this Hospital on April 27th, 1933.

## XLIII.—FROM THE STAFFORD COUNTY MENTAL HOSPITAL, BURNTWOOD.

*Report of Work carried out by Dr. Wm. Jos. Kirwan and Mr. Sale.*—

Communicated by Dr. WILLIAM REID, Medical Superintendent.

Examinations in the laboratory during 1933 numbered 1,275, as follows :—

Faeces : typhoid and dysentery, 400 ; tubercle, 13. Urines : typhoid, 13 ; abnormal constituents, 333. Blood : Wassermann reaction, 149 ; complement fixation (tubercle), 5 ; agglutination tests (various), 10 ; malaria, 24. C.s.f. : gold curve tests, 16. Cell-counts : gum-mastic, Boltz, Pandy and Nonne-Apelt tests, 16. Sputa : tubercle, 46. Drinking water : organisms, 39. Milk : food and diseases of farm stock, 126. Throat swabs, autogenous vaccines, sections, etc., 63. Animal inoculations, milk for tuberculosis, sputum for tuberculosis, 22. Post-mortems, 67 (94 per cent. of deaths).

Three cases of general paralysis were treated with benign tertian malaria, of which one is improved and two are stationary so far. No death occurred amongst thirteen general paralytics who are still resident and have been given malaria treatment in the years 1928–1931. One



female patient treated in 1932 was discharged in 1933, much improved bodily and mentally. Courses of tryparsamide injections are employed in suitable cases after recovery from the malaria treatment.

Three female patients are typhoid carriers. One female patient who had dysentery in 1928 had a recurrence in March, 1933, and is regarded as a carrier. Repeated examinations are made of the faeces of these four patients.

#### XLIV.—FROM THE STAFFORD COUNTY MENTAL HOSPITAL, CHEDDLETON.

*Report on Laboratory Work.*—By Dr. W. F. MENZIES, F.R.C.P., Medical Superintendent.

##### A.—*Routine Work.*

Blood: W.R., 499; Kahn reaction, 45; T.B., complement fixation and gonococcus test, 67; complete differential count and haemoglobin, 103; urea, sugar, Van den Bergh, alkali reserve and culture, 115; malarial films, 112; agglutinations for B. Flexner, B. typhosus and B. paratyphosus B., 625. C.s.f.: W.R., Kahn, C.B., coll. gold, cells, globulin, and sugar, 100; T.B. and other organisms, 6. Sputum: T.B. and other organisms, 74. Pus: T.B., and other organisms, 19; throat, cervical and vaginal swabs, 17. Faeces: Flexner and T.A.B., 4,059; T.B., 256; worms, ova, etc., 4. Fractional test meals and stomach contents, 81. Hair and epidermal scales, 16. Urines: routine, 1,047, cultured, 25; urea concentration, calcium estimations, phosphates, ammonia and ammonium acids, 78; Zondek Ascheim test, 1. Vaccines: 24; intradermal tuberculin, 65; animal inoculation, 22. Swabs: from kitchen, new farm, wards and coir from settees for culture, 1,030. Histological: museum specimens mounted, 35; paraffin blocks—tissue, 132; brain, 155; spinal cord, 105; celloidin blocks—brain, 36.

##### B.—*General Paralysis.*

An endeavour is being made to pursue treatment beyond mental recovery to cure of infection as evidenced by negative tests of the blood and cerebro-spinal fluid. The minimum is three courses of malaria, each followed after one month's interval by twelve weekly injections of 3 grms. of tryparsamide. Each case is considered on its merits and patients may or may not remain in hospital during the whole course; due consideration is given to those who make mental recoveries and where economic circumstances call for early discharge or extended trial. So far we have had no difficulty in convincing those leaving hospital of the necessity of returning when requested for further treatment, usually weekly for injections.

Out of 44 cases of general paralysis admitted during the past three years, 8 have completed treatment, 18 are continuing, 13 have died and 5 have discontinued for one reason or another. It is too soon to give figures of any importance in relation to the value of this line of treatment. So many of our admissions are moribund or hopelessly degenerated that an ultimate review will almost certainly be more concerned with serological than mental recovery. It is, however, our experience that cases which do not begin to improve mentally after the first course of malaria do not improve after subsequent courses.

With regard to second inoculations, generally speaking, provided the first course does not exceed 8–10 rigors, reinfection takes place quite readily after six months' interval. We always use 10 c.c. of heavily infected blood for this inoculation. A proportion of these secondary infections die out after four or five rigors, but the others continue until stopped by quinine.

Third inoculations are more doubtful. It seems advisable to delay the third inoculation 8 to 10 months or longer after the second. Our most successful case of inoculation had 30 rigors within 14 months spread over three attacks. This must be considered exceptional, however.

In two cases of collapse with coma while undergoing malaria treat-



ment 3 c.c. of a 40 per cent. solution of hexamine were injected intravenously with a salutary effect. In one case quinine hydrochloride was added. In the other rapid recovery of consciousness was followed by quinine sulphate orally. Hexamine by itself did not stop malarial rigors in two other cases.

Seven cases have complained of ocular symptoms while undergoing tryparsamide. In 5 there were no signs obvious to the ophthalmoscope. Substitution of bismuth for tryparsamide resulted in the disappearance of symptoms. In two of these cases the cerebro-spinal fluid showed steady improvement and tests are now almost negative.

In the two remaining cases optic atrophy was present. In one a prolonged course of subcutaneous injections of 1/60th gr. of strychnine sulphate daily over a period of six months, gradually increasing the dose to 1/15th gr. and discontinuing temporarily on signs of muscular cramp or stiffness, resulted in functional recovery. In the other case a similar course had no effect and atrophy is now nearly complete.

#### XLV.—FROM THE SURREY COUNTY MENTAL HOSPITAL, BROOKWOOD.

*Report on Laboratory Work.*—Communicated by the Medical Superintendent.

The following is a summary of the routine laboratory work carried out during the year:—

Blood: W.R., 145; malaria films, 70. C.s.f.: 19. Stool: 2. Urines: 1,850. Sputum: 25. Sections: 3. Swabs: 130.

#### XLVI.—FROM THE EAST SUSSEX COUNTY MENTAL HOSPITAL.

*Report of Clinical and Pathological Investigations.*—By Dr. GEOFFREY SHERA, M.A., Pathologist.

The total output of this department has registered further increase in 1933 as regards both Hospital and County examinations.

The figures are as follows:—

	1931	1932	1933
Hospital examinations	... 2,687	... 3,159	... 3,612
County examinations	... 2,114	... 1,409	... 1,614

The following is a summary of examinations during 1933:—

*Hospital Work.*—Urines: routine, 1,149; special (bacteriological fermentation tests, etc.), 395. Faeces: bacteriological, 641; special (occult blood, differential fats, etc.), 4. Bloods: Wassermann tests (M.R.C., No. 3 method), 295; bacteriological cultures, 3; complete counts, 23; partial counts, 229; films for malarial parasites, 1; sugar estimations, 47; urea estimations, 5; Van den Bergh reactions, 2; agglutinations (per organism), 488; complement fixation (tubercle), 1; Bendien test for malignancy, 10; M.K.R. (precipitation test for syphilis), 144. Zondek Ascheim (pregnancy tests), 4; hairs for ringworm, 2; sputa for tubercle bacilli, etc. 32; organs cut and stained, 14; autogenous vaccines, 8; biological tests, 2; c.s.f., 37; test meals and vomits, 4; pleural fluids, 3; organs mounted for museum, 5; post-mortems, 64 (65.9 per cent. of deaths).

*County Work.*—Tests under tuberculosis order (1925): biological, 7; microscopical, 23; histological, 1. Tests under Milk and Dairies (Consolidation) Act: biological, 407; microscopical, 253. Tests for Public Health Authorities: sputa for tuberculosis, 677; swabs for diphtheria, 144; milks, 6; faeces, 8; blood tests, 66; pleural fluids, 4; urines, 2; vaccines (autogenous), 3; other tests, 10. East Sussex National Health Insurance Committee: autogenous vaccines, 3.

#### *Scarlet Fever.*

In February, four cases of scarlet fever of a mild type occurred in one of the female wards and it was decided to discover and isolate, if possible, any patients harbouring haemolytic streptococci in the throat. The whole



of the ward (50 patients) was swabbed, and the following results were obtained :—

*Haemolytic Streptococci in the throat.*

1. A heavy incidence in culture	...	...	...	14 per cent.
2. A small incidence in culture	...	...	...	36 per cent.
3. None present in culture	...	...	...	50 per cent.

It is thus obvious that half the ward showed haemolytic streptococci and isolation became impracticable.

The outbreak, fortunately, ceased some five days after the swabbing. This piece of research indicates the futility of throat swabbing in such outbreaks. The group of haemolytic streptococci is a wide one containing a number of different strains (including *S. scarlatinae*), and the employment of the Dick test with immunisation of all Dick-positives (reactors) is more rational. In acute haemolytic streptococcal infections apart from scarlet fever, we have found the use of a stock sensitised haemolytic streptococcal vaccine is usually extremely effective in cutting short such infections, particularly throat infections, but also wound infections.

*Bacillary Dysentery.*

In November, four female cases of clinical dysentery were notified and a complete search of a ward of 59 beds was made for carriers. Of these four cases, two were found to harbour *B. dysenteriae* (Flexner) and both died of intercurrent disease, one of acute miliary tubercle and the other of broncho-pneumonia. The other two were bacteriologically negative. In the ward mentioned, three positive results for *B. Flexner* were obtained. Two were probably due to getting infected through defective habits, whereas the third is a very clean patient who has been repeatedly positive and who is most likely the essential carrier.

All supposed carriers throughout the female block were tested, with negative results. The outbreak has apparently ceased.

*Intestinal Infections, other than Dysentery.*

In 1932–1933, an investigation of the serum agglutination reactions to *Brucella abortus*, the *Salmonella* group, and *B. dysenteriae* (Sonne) in new admission cases resulted in some 300 serums being tested, with the following results :—

				Positive results, with end-titre.
<i>Brucella abortus</i> (Undulant fever)	(1)	1 in 25		
	(1)	1 in 37	...	2 cases. 0.66 per cent.
<i>Salmonella</i> group ... ..	(8)	1 in 25		
	(9)	1 in 37		
	(3)	1 in 50		
	(9)	1 in 87		
	(1)	1 in 187		
	(3)	1 in 250	...	33 cases. 11 per cent.
<i>B. dysenteriae</i> (Sonne) ... ..				No positive results.

This last organism has been occasionally recovered from diarrhoea cases in the institution, mostly of a mild type.

*Bendien Cancer Test (Cronin-Lowe modification).*

Ten cases were tested by this diagnostic method, using the colloidal acid vanadate solution and the three-phase reaction. The blood specimens were taken in the fasting condition in suspected cases of cancer. The test was found to be inaccurate; for instance, two contiguous tubes gave contradictory results, and the criticisms of the tests, so ably stated in the *British Medical Journal* by the Charing Cross Hospital workers, were confirmed and the conclusion arrived at was that the test was of no

diagnostic value. In a mental institution, such a test would have been most valuable had it been efficient.

*Cultures from the Gall-Bladder (Post-mortem).*

As a matter of interest, both from the frequent incidence of gall-stones and cholecystitis and as a possible indication of the carrier state, cultures were taken post-mortem in 25 cases (so far) with the following results:—

Sterile, 18; Infected, 7. Organisms isolated: bacillus coli communis in 5 instances; bacillus lactis aerogenes in 2 instances. Neither B. typhosus nor streptococci were isolated.

The series is small but interesting, and this work is being continued.

*Comparison of the Meinicke and Wassermann Tests (M.R.C. No. 3).*

Number of tests under consideration, 148.

	Meinicke: Positive.	Negative.	Positive.	Negative.
	Wassermann: Positive.	Negative.	Negative.	Positive.
C.s.f. ...	6	5	0	1
Blood ...	10	124	0	2

The Meinicke test used was M.K.R. 11. The Wassermann test was M.R.C. No. 3.

It would thus appear that the Wassermann test more than holds its own for diagnostic accuracy against the Meinicke, judging by the last column. The Kahn test has since been substituted for the Meinicke as a routine test in addition to the Wassermann as a routine flocculation reaction. In specific infections, it would seem that at least one flocculation test should be performed in addition to the Wassermann test, so as to increase the sensitivity of the procedure.

*Auto-sensitized Vaccines.*

In obstinate cases of staphylococcal infection, the use of an autogenous strain killed and incubated with the patient's own serum, which is subsequently removed and saline substituted, has been found effective where an ordinary autogenous vaccine either failed or only gave temporary immunity. Initial dosage 200 millions and final dose 2,000 millions at weekly intervals. Large doses like these may be used with impunity as there is little or no reaction.

*Sensitized Haemolytic Streptococcal Vaccine.*

This type of vaccine is given daily for 6 days in doses beginning with 50 millions and ending with 4,000 millions. It gives immediate immunity and no reaction, and is probably the most effective type of vaccine there is. A stock is kept and it is made in the laboratory. It is useless in scarlatina as the strain is different.

The laboratory staff now comprises three technical assistants and two post-mortem attendants.

XLVII.—FROM THE ISLE OF WIGHT COUNTY MENTAL HOSPITAL.

*Report of Clinical and Pathological Investigations.*—By Dr. ALEXANDER WOOD, Deputy Medical Superintendent.

A.—*Routine Laboratory Work.*—The following is a summary:—

Bacteriological: stools, 80; urines, 9; sputa, 10; throat swabs, 5; blood cultures 4; Widal's, 48. Meinicke K.R.: blood, 16; c.s.f., 4. Lange gold sol, 12. Blood films for malarial parasites, 8. Microscopical sections, 6. Stools for parasites, 6. Post-mortem examinations, 23 (92 per cent. of deaths).

Towards the end of the year a systematic examination of stools was commenced to investigate the presence of typhoid carriers. This work is now well under way.



B.—*Special Report upon Clinical Cases.*

1. H.E.F., a male, aged 47, was admitted to Whitecroft as a temporary patient on March 29th, 1933. He had been diagnosed as a case of lobar pneumonia (right base) on March 21st, 1933, by his own doctor. On the 27th he became violent and unmanageable, and it was considered impossible to treat him at his own home. He had thrown an oxygen cylinder through a window. On the night before admission he was given, hypodermically, morphia gr.  $\frac{1}{2}$  and hyoscine hydrobromide gr.  $\frac{1}{50}$  with little effect. This dose of morphia and hyoscine was repeated hypodermically the following morning and was followed by narcosis. On admission at noon he was deeply unconscious, the face was cyanosed, a cold clammy sweating was present, breathing was very shallow and sighing at the rate of 8 per minute. The radial pulse, however, could be easily felt, the rate being 114 per minute. Temperature was  $97.6^{\circ}$  F. The pupils were dilated and the response to light was extremely poor. He looked moribund.

Absence of breath sounds and a solid dulness on percussion were noted at the right base. The heart was slightly dilated. Auscultation revealed a tic-tac rhythm, weak sounds with a soft blowing systolic murmur at the mitral area. He was a tall muscular man who had been much addicted to alcohol until two years previous to his illness. Immediate treatment consisted of raising the foot of the bed and applying heat by means of hot bottles. Strychnine hydrochloride, grs.  $\frac{1}{30}$ , and digitalin, grs.  $\frac{1}{50}$ , were given hypodermically with some improvement in breathing and pulse. Continuous rectal saline containing glucose and brandy was commenced and continued during the night. At 6 p.m. strychnine hydrochloride, grs.  $\frac{1}{30}$ , and digitalin, grs.  $\frac{1}{50}$ , was repeated hypodermically. Breathing always became less shallow after the exhibition of strychnine. At 10 p.m. he was muttering and restless. Paraldehyde, drachms 3, was given per rectum. He slept for three hours. During the second day he was restless and confused, but too weak to be violent. Brandy was given by the mouth. Saline per rectum was repeated, along with strychnine hydrochloride, grs.  $\frac{1}{30}$  and digitalin, grs.  $\frac{1}{100}$ . A soap and water enema produced no result. During the day he slept at intervals. Paraldehyde, drachms 3 per rectum, was repeated at night with little effect. Brandy was administered frequently per rectum. He slept about three hours.

The third day was similar to the second. Speech remained confused and rambling. Temperature had never risen above  $97.6^{\circ}$  F., pulse was 90, respiration rate was 30. On the fourth day he appeared to have definitely improved physically and was able to take fluids by mouth, but was still confused, restless and hallucinated auditorily, thinking that he was at home and was carrying on a conversation with his wife in the next room.

He slowly improved mentally and signs of toxæmia abated. Subsequently he was discovered to have pus in the right pleural cavity, and was discharged on April 22nd, 1933, by two members of the Visiting Committee specially summoned for that purpose, and sent to the County Hospital for operation, all mental disorder having disappeared.

During his stay at the County Hospital full use was made of the facilities of the mental after-care afforded by the Mental Welfare Clinic held weekly at that hospital. He was subsequently discharged and returned to his home, mentally and physically cured.

2. D.M.W., a female, aged 28, was admitted under certificate on February 5th, 1933. She was well orientated for place and person and could converse readily in a relevant and coherent manner, but was hallucinated auditorily and inclined to become impulsive. Her emotional control was poor. She appeared to have poor insight into her condition and showed the "shut-in" personality to a marked degree. Though stated to be physically weak, apart from carious teeth and some obstinate constipation, no markedly abnormal state was discovered. No gross



sepsis of the gums was present. Her mental condition improved considerably until March 15th, 1933, when she complained of a sore throat, and a swab revealed the presence of Klebs-Loeffler bacilli. Anti-toxin was given and the slight toxæmia disappeared in the course of a few days. Meanwhile she drew attention to her ears, which showed a recent exacerbation of a previous eczema. Swabs taken from both ears showed again the presence of K.L.B. Three weeks later K.L.B. could still be grown from the ears but not from the throat. From the time of the injection of anti-toxin she seemed to improve considerably both mentally and physically.

The fact that volition showed no impairment appears to have rendered the use of Sec. 5 of the Act of no avail. Otherwise she might, perhaps, have been sent in as a temporary patient. A strong suspicion exists to the effect that one of the main determinants of her psychosis was the toxæmia caused by the Klebs-Loeffler bacillus, which enquiries show to have been existing for at least five years. Chronic otorrhoea is also reported to exist among other members of her family. She was discharged on May 5th, 1933, and continues well.

#### XLVIII.—FROM THE WILTSHIRE COUNTY MENTAL HOSPITAL.

*Report on Laboratory Work.*—By Dr. J. M. C. SPEER, D.P.M.

*Dysentery.*—The outbreak of dysentery which commenced in the autumn of 1932 on the male side came to an end in January, 1933; one case occurred in that month. The outbreak was traced to a patient in M. 6 ward, who was found to be a carrier.

At the end of November a case of dysentery occurred on the female side in F. 3 ward. This case was followed by another in the same ward a week later. A further case occurred in F. 6 ward and one in F. 4 ward. A search for a carrier was made among F. 3 patients. When the case occurred in F. 6 ward, it was found that some patients lived in F. 6 ward by day and slept in F. 3 dormitory. These were examined and one (F.A.G.) was found to be a carrier. She was isolated in dysentery ward. The search for other carriers continues.

When the outbreak occurred prophylactic inoculation with dysentery vaccine of all patients on female side of main building was carried out on the same lines as that on the male side last year.

The same bacillus was isolated from the four cases on the female side and from the carrier.

Whilst little doubt was felt that the causal organism was a dysentery bacillus, considerable difficulty has been met with in typing it. Dr. Thornton, of Salisbury, sent specimens to the Ministry of Health Laboratory, Whitehall, and Dr. Scott, their pathologist, reported that the bacillus was either an unnamed type or a degraded variant which had lost its type specific antigen.

One isolated case of dysentery occurred on the male side in the hospital ward. A search for a carrier in that ward proved negative. The patient is an ex-soldier and states he suffered from dysentery abroad, so it is concluded that this was a recurrent attack.

During the year 1933, 1,228 bacteriological examinations of faeces were made, particular attention being paid to the dysentery wards, to the old dysenteric patients not accommodated in the dysentery wards, and to recent admissions. Apart from the carrier associated with the recent outbreak, no other was found. The repeated examinations of old carriers who are isolated in dysentery wards gave negative results.

*Diarrhoea.*—In August a patient in the male hospital ward had an attack of diarrhoea lasting a week. He had been admitted one week before and was in a poor state of health. The organism isolated and believed to be the cause of his trouble was bacillus pyocyaneus. According to various authorities, this bacillus can cause enteritis. It has a wide-spread distribution.



*Milk.*—Periodical bacteriological examinations of samples of milk from the farm were made and showed that a good standard of bacteriological purity is being maintained.

*Summary of Laboratory Examinations.*

Bacteriological examination of faeces, 1,228 ; sputa for T.B., 18 ; urine, chemical, 96 ; blood counts, 4 ; milk, bacteriological, 9.

XLIX.—FROM THE BRISTOL CITY MENTAL HOSPITAL.

*General Report.*—By Dr. E. BARTON WHITE, Medical Superintendent.

*A.—Pathological and Biochemical.*

During the year 1933, 1,930 examinations were made—practically the same number as in the previous year.

*Summary of Examinations.*

Urines : routine, for abnormal chemical and cellular constituents, 1,249 ; special examinations, 66. Blood : total counts, 31 ; malarial films, 25 ; Widal reaction, 7 ; Wassermann reaction, 341 ; chemical, 9. C.s.f. : complete examinations, i.e., cell count, protein content, chloride content, Lange curve and Wassermann, 43. Faeces : bacteriological, 18. Sputum examinations, 37. Other cultural examinations, 11. Histological examinations, 20. Post-mortem examinations, 73 (77·6 per cent. of deaths).

*B.—Clinical.*

1. *Dysentery Prophylaxis.*

The prophylactic inoculation of all patients with dysentery vaccine (type Flexner W.X., which is the organism most frequently found in the past at this hospital) has been continued, and during the year 290 new patients have received the injections. No case of Flexner infection has occurred during 1933, and only one case of dysentery has been notified. This was a Sonne infection in which the organism was recovered from the faeces during life. Simple diarrhoea was investigated in nine other cases with negative findings.

The hospital has remained practically free from dysentery since the institution of vaccine prophylaxis five years ago, and it is felt that a sufficient period of trial has now been given to justify our complete confidence in its effectiveness. It is of interest to note that last summer there was a sharp epidemic of dysentery in a neighbouring institution while our own hospital remained free.

2. *Syphilis in new Admissions ; Statistical Survey.*

For the last four years routine Wassermann reactions have been performed on all new admissions, with further complete investigation of the cerebro-spinal fluid in those which gave a positive reaction in the blood. It was stated in last year's report that the proportion of positive reactions in males was found to be much higher than in female admissions, and this finding has been confirmed over the larger series now available for analysis. Since the test was first performed, 1,177 admissions of both sexes have been investigated, giving 137 positives, or 11·6 per cent. Of these admissions, 520 were males, giving 89 positives, or 17·1 per cent ; 657 were females, with 48 positives, or 7·3 per cent. These figures include 73 general paretics, but the same disparity of sex incidence remains if these be excluded, as follows :—

Total (excluding G.P.I.)	...	1,104	:	positives 64=5·8 per cent.
Males	...	471	:	positives 40=8·5 per cent.
Females	...	633	:	positives 24=3·9 per cent.

It is seen, therefore, that even apart from general paralysis males show a positive Wassermann reaction more than twice as often as females, a fact which affords some difficulty in interpretation. Similar findings are reported from general as distinct from mental hospitals, and it seems,



therefore, likely that the same state of affairs exist in the general population. It has been suggested (J. F. Nicole, *B.M.J.*, April, 1932) that a difference in reaction to syphilis may be due to a difference in composition of female blood, which, during the reproductive period of life is richer in lipoid than the male.

It is certainly true that women who are suffering from clinical syphilis not infrequently show a negative Wassermann reaction. On the other hand, considering the natural history of the disease and its mode of transmission, it appears probable that the incidence in males is genuinely greater than in females, for a woman is much more likely to transmit the disease in ignorance that she is infected.

An attempt has been made to classify the positive cases according to the type of mental disease present, as follows :—

	Male.	Female.	Total.
G.P.I. ... ..	49	24	73
Delusional ... ..	6	4	10
Confusional ... ..	6	1	7
Melancholia ... ..	6	4	10
Mania ... ..	3	5	8
Mental defect ... ..	2	1	3
Moral insanity ... ..	1	1	2
Insanity with epilepsy ... ..	2	1	3
Insanity with gross lesions ... ..	7	7	14
Primary dementia ... ..	2	0	2
Senile dementia ... ..	5	0	5
	89	48	137

It would be unwise to draw final conclusions from the material at present available, as the numbers in each section are only small. The fact, however, emerges that the majority of "positive" cases admitted to the hospital during the last four years are general paralytics, and if we include with them the cases of insanity with gross lesions (which include congenital cases and are presumably due to organic syphilitic disease of the brain), 63·5 per cent. of the cases are accounted for. The remaining 50 cases of miscellaneous mental disease are distributed fairly evenly in the other groups, and do not differ appreciably from the incidence of these special types in non-syphilitic mental patients. The inference appears to be justified that in these cases syphilis is merely incidental and not of etiological importance.

### 3. *Malaria Therapy in General Paralysis.*

Malaria treatment has been given to 12 cases of general paralysis, 10 females and 2 males, during the past year, making a total of 54 cases treated during the past four years. Of these, 33, or 61 per cent., have shown considerable improvement both mentally and physically. Out of this total of 33 cases, 12 have been discharged, 6 females and 6 males. Only one case has relapsed and had to return, the remainder are all leading useful lives and many of them have remained well for two and more years.

Laboratory investigations of the blood and cerebro-spinal fluid are carried out before and after treatment. While many who have improved mentally also show serological improvement, there are some who have not shown this improvement, and there seems to be little correlation between the patient's mental state after treatment and the serological findings.

Histological examinations have been made on 12 brains from patients dying before and after treatment. A comparison of the findings in these cases show that where there has been definite mental improvement the perivascular infiltration of the blood vessels is much less evident, and the



increased vascularity seen in the untreated cases is much less in those cases that have shown improvement following treatment.

L.—FROM THE CROYDON BOROUGH MENTAL HOSPITAL.

A.—*Report of Laboratory Investigations.*—Communicated by the Medical Superintendent.

The following is a summary of laboratory work during the year :—

Urine examinations, 785. Bacteriological examinations : stools, 50 ; sputa, 52 ; pus, 14. Kahn's test for syphilis, 44. Blood : sugar estimations, 60 ; urea estimations, 38. Widal reactions, 11. Sections cut for histological examinations, 124.

B.—*On the Rôle of Hypnotics in Mental Hospital Practice.*—By Dr. T. P. REES, M.R.C.P., D.P.M. (Thesis approved for M.D. Wales, 1932.)

*Conclusions.*

1. Sleep is a widespread internal inhibition resulting from an instinctive reaction to disinterestedness or to conditioned reflexes.

2. Prolonged sleeplessness plays an important part in the causation and exacerbation of mental disorders bringing about neuronic changes which in the early stages are reversible, the patients recovering under appropriate treatment ; in the advanced stages the changes are irreversible, leading to irrecoverable dementia or death.

3. Severe sleeplessness should be regarded as a medical emergency to be dealt with as promptly and as effectively as the surgeon deals with a strangulated hernia.

4. No trustworthy evidence has yet been brought forward to show that hypnotics produce organic changes in the nervous system, thus impairing patients' prospects of making a complete recovery. Polson has shown that the mucinoid bodies found by Mott, Woodhouse and Pickworth in the central nervous system of animals treated with hypnotic drugs appeared with equal frequency in the brains of the controls and of the sulphonal treated animals, and concluded that they were a pathological lesion occurring in laboratory animals totally unconnected with experimental procedure.

5. Hypnotics are an invaluable asset in mental hospital practice and their prompt and judicious use materially improves the prospects of recovery by :—

(a) Promoting sleep and preventing the cellular changes which result from sleeplessness.

(b) Allaying motor restlessness and preventing the consequent exhaustion which is a far too common cause of death in the most recoverable forms of mental disorder, such as acute delirious mania, puerperal insanity, and confusional insanity. They help to tide these patients over the crisis. A high recovery rate is largely dependent on the treatment of such cases, failure to produce rest or sleep will lead to death or irrecoverable dementia.

(c) Cutting short attacks of mania or melancholia and preventing them from drifting into states of acute delirious mania or agitated melancholia with confusion.

(d) Dulling the patients' perception and consciousness making them less sensitive to their hallucinations and delusions so that they are less likely to become fixed and systematized.

(e) Producing a state of calm and quietude in the wards ; a patient is more likely to get well in quiet and peaceful surroundings than where the opposite conditions prevail.

(f) Diminishing the number of accidents which may result from the patients' impulsiveness, querulousness, violence or suicidal tendencies.

6. A comparison of the relative merits of various hypnotics based on 5,000 admissions showed :—

(a) Paraldehyde to be the safest and most reliable all-round hypnotic.

(b) Sulphonal the most satisfactory where there is motor restlessness or where a prolonged effect is desired.

(c) The barbiturates to be of very limited value for psychotics, apart from the use of luminal in epilepsy.

7. The dangers attending the administration of large doses of hypnotic drugs are much less in mental hospital than in private practice because :—

(a) The patient is never allowed the custody of his own medicines, each separate dose being handed out by the nurse and taken in the nurse's presence.

(b) The patients are under the constant observation of a trained and experienced nursing staff.

(c) There is always a medical officer close at hand in case of emergency.

## LI.—FROM THE DERBY BOROUGH MENTAL HOSPITAL.

*Report of Pathological and Clinical Investigations.*—By Dr. JOHN BAIN, M.A., Medical Superintendent, and Dr. W. J. BARBOUR, Pathologist, A.—*Pathological and Biochemical.*

During the year 1933, 1,372 examinations were made.

### *Summary of Examinations.*

Urines : routine, 342 ; special, including bacteriological and urea concentration tests, 35. Faeces : bacteriological, 13 ; special reactions, 19. Blood : total counts, 28 ; differential, 20 ; malarial films, 16 ; sugar estimations, 12 ; sugar tolerance curves, 2 ; urea estimations, 21 ; non-protein nitrogen, 10 ; creatinine, 2 ; Van den Bergh, 3 ; Widal reaction, 1 ; culture, 4. Blood sera for Kahn reaction, 150. C.s.f. : complete examination, 98 ; cell count, 98 ; protein content, 30 ; globulin tests, 89 ; gold curve, 90 ; Kahn test, 86 ; chloride estimations, 70 ; sugar estimations, 17. Bacteriological : swabs and cultures, 51 ; sputum examinations, 25. Post-mortem examinations, 36 (87·8 per cent. of deaths). Organs cut and stained, 160. Organs permanently mounted for museum, 10.

### B.—*Clinical.*

1. *Syphilis in relation to Mental Disease.*—Investigation of the incidence of syphilis was continued, the blood being examined by the Kahn test and the cerebro-spinal fluid tested by at least the four classical tests, viz., Kahn, cell count, gold curve and globulin estimation.

The results are as follows :—

Of 36 female admissions examined, two gave a positive blood Kahn (total admissions—74).

Of 25 male admissions examined seven gave a positive blood Kahn (total admissions—62).

Table of Female Cases :—

Initials.	Admitted.	Age.	Blood.	C.s.f.	Diagnosis.	Result.
F.W.	29.5.33	58	+	+ Paretic curve.	G.P.I.	Discharged 17.11.33
A.W.	8.6.33	60	+	+ Luetic curve.	Cerebral syphilis.	Discharged 15.9.33

Table of Male Cases :—

Initials.	Admitted.	Age.	Blood.	C.s.f.	Diagnosis.	Result.
H.C.	18.1.33	51	+	+ Paretic curve.	G.P.I.	Died 1.2.33
W.J.	2.2.33	64	+	+ Luetic curve.	G.P.I.	Died 1.5.33
F.H.	16.3.33	34	+	—	Secondary syphilis.	Discharged 16.12.33
G.I.	23.3.33	32	+	+ Luetic curve.	Cerebral syphilis.	Discharged 23.5.33
F.V.	21.4.33	53	+	+ Paretic curve.	G.P.I.	Died 13.10.33
A.S.	23.5.33	32	+	+ Paretic curve.	G.P.I.	Alive.
P.M.	18.12.33	52	+	Negative.	Tertiary syphilis.	Alive.

Thus of the + bloods in both sexes 77·7 per cent. were neurosyphilitics.



2. *Malarial Treatment*.—Five patients (3 men and 2 women) were inoculated with malarial blood.

*Results*.—One male case (W.J.) died of general paralysis, one male case (F.H.) of melancholia with secondary syphilis recovered, and one male case (H.S.) of dementia praecox showed no change. One female case (A.K.) of neurosyphilis has improved, and one female case (A.A.) of delusional insanity shows no change.

### LII.—FROM THE IPSWICH BOROUGH MENTAL HOSPITAL.

*General Report*.—By Dr. P. BANBURY, D.P.M., Medical Superintendent.

#### A.—*Toxic Confusional States*.

An investigation of the value of administration of glucose-D is being carried out, and results in a small number of cases have proved encouraging from the physiologic point of view.

#### B.—*Dementia Praecox*.

Sulphur therapy, having proved disappointing, has been discarded and superseded on the female side by intensive occupational therapy.

#### C.—*Out-patient Clinic*.

The number of new patients during the year was 64 (30 males and 34 females). The total attendances number 319 and the clinic continues to be held once weekly. Ten patients (2 males and 8 females) entered the Mental Hospital on a voluntary basis; 12 (8 males and 4 females) were regarded as definitely relieved, and 14 patients (8 males and 6 females) were referred for diagnosis and advice only. These numbers show an increase on the preceding year.

#### D.—*Pathological and Bacteriological Work*.

Dr. A. M. Maccallum, the Assistant Medical Officer, has carried out 15 post-mortem examinations (54 per cent. of the deaths during the year). He has also examined blood-films, sputa and urine as necessary.

The services of the voluntary hospital are still placed freely at our disposal when required.

### LIII.—FROM THE LEICESTER CITY MENTAL HOSPITAL.

*Laboratory Report*.—By Dr. T. WISHART DAVIDSON, D.P.M., Pathologist, and Dr. J. D. W. PEARCE, D.P.M., Assistant Pathologist.

Routine laboratory investigations during the year 1933 were as follow:—

Bacteriological examination of faeces, 397; culture of blood, urine, pus and exudates, 41; examination of sputum for T.B., 65; faeces and urine for T.B., 61; blood counts, 131; benzidine tests, urea estimations, Van den Bergh reactions, blood sugar, tolerance tests, test meals, etc., 93; Widal tests, 390; C.s.f. examinations, 26; malaria blood films, 392; Wassermann reaction of: blood, 218; c.s.f., 26; Vernes test of blood, 218; tissue cut and stained, 23. Urine examinations, 952. Post-mortem examinations, 69 (93 per cent. of deaths).

*Wassermann Reaction* (M.R.C. No. 1 Wyler modification).—Of the 214 direct admissions, blood from 148 was examined; the remainder were not examined as they were either re-admissions and known negatives, or died or were discharged shortly after admission.

Of the 82 females tested, 6 (7.3 per cent.) gave a positive reaction; and of the 66 males, 5 (7.6 per cent.) were positive.

The incidence rate for syphilis in the 148 admissions tested was 7.4 per cent. General paralysis was diagnosed in 2 females and 5 males.

*Syphilimetric Method of Vernes*.—Comparative tests between the Wassermann reaction and the Vernes test were continued. Of the 148



admission cases tested, there was complete agreement between the two tests in 142 (95·9 per cent.). In the six instances (4·1 per cent.) in which there was disagreement, the variations in reading were as follow :—

W.R.+	V?	2 (general paralysis).
W.R.+	V—	3 (2 general paralysis).
W.R.—	V+	1 (clinically not a syphilitic).

The Vernes test was used on numerous occasions to check and control the drug treatment of all syphilitics.

*Malaria Treatment of General Paralysis.*—Five males and one female were treated by the inoculation of malaria blood. One male was discharged as “recovered,” one died shortly after treatment and three benefited slightly; the female was transferred, unimproved, to another mental hospital.

Malaria treatment was commenced in 1924, and the results following ten years experience are as follow :—

	No.	Per cent.
Discharged ... ..	24	23·5
Improved ... ..	3	2·9
Unimproved ... ..	22	21·6
Deaths, associated with malaria ... ..	10	9·8
Deaths, unassociated with malaria ... ..	43	42·1

Actually, 33 patients were discharged as recovered, but 6 relapsed, were re-admitted and died; whilst 3 relapsed and were re-admitted, and are included in the unimproved group.

*Dysentery.*—During March there was a small outbreak of dysentery (Flexner Y) on the male division. Twelve patients were infected. Prophylactic inoculation of the patients in the ward concerned was not effected, and with isolation and disinfection the epidemic died out. A carrier was suspected to be the cause, though none was found.

An enquiry was commenced into the value of vaccination as a prophylactic against dysentery, and is still proceeding.

*Chronic Epidemic Encephalitis.*—Intravenous treatment by weekly injections of 100 c.c. 10 per cent aqueous solution of sodium iodide were continued throughout the year. One patient had 57 injections. At first he improved, but his condition is now stationary.

A second case remains unchanged after 31 injections.

Treatment was discontinued in two cases on account of vasodilator reactions.

*Out-patient Clinic.*—Fifty-five patients were seen during the year, 35 being new cases. Eighteen patients were admitted to the hospital on a voluntary basis, and four under certificate. In all, 273 attendances were recorded.

The patients seen were classified as follow :—

Psychoneurosis, 23; manic-depressive psychosis and involutional melancholia, 10; paranoia and paraphrenia, 7; general paralysis, 6; dementia praecox, 2; chronic epidemic encephalitis, 1; disseminated sclerosis, 1; epilepsy, 3; mental defect, 2.

#### LIV.—FROM THE CITY OF LONDON MENTAL HOSPITAL.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of work carried out in the laboratory during the year.

Analyses of urines, 515; with quantitative tests, 7; blood examinations, 3; examination of faeces and urine for bacillus typhosus, etc., 156; agglutination test, 8; examination of swabs, 3; Widal tests, 3. Miscellaneous reactions, section cutting differentiation of bacteria, etc. Preparations of all medias, sugars, stains, etc.



## LV.—FROM THE NEWCASTLE-UPON-TYNE CITY MENTAL HOSPITAL.

*Report of Pathological and Clinical Investigations.*—By Dr. H. D. MACPHAIL, O.B.E., Medical Superintendent, and Dr. G. M. MUIRHEAD.

## A.—Pathological.

The following examinations were made during the year :—

Urines : routine, 300 ; special (including bacteriological and chemical) 112. Faeces : bacteriological, 32. Blood : counts, 20 ; films (malaria, etc.), 264 ; Widal reactions, 22 ; Wassermann reactions, 35. C.s.f. : complete examinations (Wassermann reactions, colloidal gold curves, etc.), 13. Bacteriological : swabs and cultures, 13. Sputum examinations, 20. Post-mortem examinations, 28.

## B.—Clinical.

*Treatment of General Paralysis.*—The majority of such cases admitted during the year have been well advanced in the disease. Induced malaria remains the favoured method of treatment and is complemented by a course of tryparsamide, unless contra indications exist. Following previous disappointing results from the use of sulphosin injections, two patients were treated with pyrifer. They were given a course, approximating closely to that of induced malaria in the periodicity and height of temperatures, but neither exhibited any marked mental or physical improvement, and one later developed a seizure, terminating in death. During 1933, 7 cases, treated by induced malaria and tryparsamide, were discharged.

It is interesting to record that, since the inception of malarial therapy here in 1927, 31 patients have been discharged, and only one of these has been readmitted.

## LVI.—FROM THE NORWICH CITY MENTAL HOSPITAL.

*General Report.*—By Dr. DAVID RICE, D.P.H., Medical Superintendent.

## A.—Pathological and Biochemical.

*Summary of Examinations.*

Urines : routine, 397 ; of which 33 microscopic films were examined. Faeces : occult blood, 2. Blood : total counts, 2 ; blood films, 2. Meinicke's reaction of blood serum, 8. C.s.f. : colloidal gold reaction, 10 ; Sigma reaction, 6 ; Meinicke's reaction, 12. Bacteriological, including examinations of faeces, urine and pus, 9. Sputum examinations, 2. Vomit examinations, 4. Post-mortem examinations, 29 (72 per cent. of deaths).

One female staff, probationer nurse, was found to have T.B. in her urine and was discharged from service.

## B.—Clinical.

1. *Treatment of Stupor by Aqueous Colsul.*—By Dr. L. G. MILLAR PAGE.

Male, W.C.T., age 38. Admitted infirmary May 18th, 1929, certified September 26th, 1932, extremely slow in speech and movement and became stuporose.

October, 1933, aqueous colsul given intramuscularly in the buttock 1 c.c. alternate days for two days, 2 c.c. alternate days for five days, and two injections of 3 c.c. alternate days, was administered.

Temperature, one peak second day of treatment rose to 101.2° F., after which the temperature slowly fell, in spite of injections till the sixth day when a peak of 100.6° F. was recorded.

Ninth, eleventh and thirteenth days temperature rose 100.2° F, 100.2° F and 101.4° F. respectively after which temperature again fell to average 98° F., in spite of injections of 3 c.c.



Respirations did not exceed 20 per min., nor pulse 86 per min. Patient ate good meals, and was kept in bed, but lost weight. October, 1932, his weight was 9 st. 4 lb.; December, 1932, 8 st. 12 lb.; October, 1933, 9 st. 3 lb.

Fifteen days from first injection his weight was 8 st. January, 1934, the mental condition is unchanged since admission. Told to put out tongue, reaction time, to open mouth 5 to 7 secs., when tongue was protruded 10-15 secs. To close mouth, 4 secs.

*Conclusions.*—The rise in temperature is not in proportion to the dose of aqueous colsal injected; in spite of 3 c.c. injected, the temperature response was not as much as one degree above normal. Induration may take place at site of injection and pain is complained of by the patient.

Male, W.J.B., age 32, admitted for the third time April 20th, 1933, was roused from stupor purely by the fear of further injections. He has improved steadily since, although he relapsed for a week, becoming impulsive, sullen and extremely introverted and hallucinated, but is now working laying dining tables. He had been stuporose 6 months before injections were administered.

## 2. *Treatment of Post-Encephalitic Parkinsonism by Liquor Stramonium (P. D. & Co.).—By Dr. L. G. MILLAR PAGE.*

Male, J.P., age 45, labourer, married. Admitted, November, 1924. Father died G.P.I. Patient served in R.F.C., 1917 till July, 1919. Returned to work, and suddenly became sleepless, restless and agitated, and after 3 days saw double. He was drowsy 14 days from onset, but could be easily roused. August, 1919, he was sent to infirmary. On admission, November, 1924, he had suicidal thoughts; pupils were dilated, and knee jerks exaggerated.

December, 1924. Complaining of giddiness; introverted, depressed.

May, 1925. Gained 13 lb. in weight, a further 9½ lb. by August (10-8). October, 1925. Slight Parkinsonism observed. December, 1925. Walking like a "stopping pendulum."

February, 1926. Salivation diminished by Tr. Belladonna  $\overline{\text{MX}}$  t.d.s. October, 1926. Expressionless countenance; feeding himself is a difficulty.

March, 1927. Signs and symptoms increasing.

June, 1928. Encephalitis lethargica syndrome present, unable to walk; he takes a long time to raise a spoon to feed.

1929. Sits in chair, unchanged. 1930. Similar condition.

1931. Contracture of left arm and leg. To bed. October, 1931. Can do very little for himself and does not request attention.

1932. Sits in chair, vegetates, but is clean in habits.

November, 1933. Liquor Stramonium  $\overline{\text{MV}}$  and dose increased  $\overline{\text{MV}}$  after four days till  $\overline{\text{MXXX}}$  t.d.s. were taken. December, 1933. Able to turn over in bed unaided after three months' inability to do so.

January, 1934. Diplopia; complaining of blurred vision. Liquor Stramonium reduced to  $\overline{\text{MXV}}$  t.d.s. Salivation is not troublesome. Patient says he feels better: he can walk slowly and even manage steps. He has no complaints.

*Conclusions* (of three cases).—Slight improvement follows the administration of  $\overline{\text{MX}}$  t.d.s. Salivation is much diminished, spasticity is lessened, walking and the erect attitude made easier. Oculogyric symptoms are not complained of by the patient.

Administration of  $\overline{\text{MXXX}}$  t.d.s. may bring about great dilatation of the pupil and loss of accommodation, but no advantages other than that produced by  $\overline{\text{MXV}}$  t.d.s. in water.

Patients going out for the day ask for their medicine, as missing a dose causes relapse towards the previous condition.

## 3. *Treatment of Agitation and Insomnia by Tab. Soneryl.—By Dr. L. G. MILLAR PAGE.*

CASE A.—Male, A.P., age 58, suffering from Acute Agitated Melancholia. Suggested cause, business worry. Admitted October 27th, 1933; all reflexes exaggerated. Pulse 62 per min. B.P. S/D, 190/110 m.m. mercury. Mentally, patient had delusions of persecution and unworthiness; was apprehensive and very depressed and agitated. Negativistic and resistive; auditorily and visually hallucinated. Would not lie in bed. Given 2 tablets of Soneryl t.d.s., he was relieved of physical agitation the second



day, and lay resting. November 3rd, 1 tablet t.d.s., patient up and about ward. November 9th. Dirty at night, agitated, resistive, difficult over taking food. November 12th. 2 tablets t.d.s. Much improved, resting. Dose was diminished and tablets later stopped. December 28th. To bed, very agitated. Given 3 tablets t.d.s.

January 4th, 1934. Tablets reduced to 1 t.d.s., patient resting well. January 6th. Agitated and restless, soneryl 3 t.d.s. resumed, with relief the following day. February 11th. Administration of 3 soneryl tablets t.d.s. has continued, behaviour has been normal. Mentally, the patient is quiet; otherwise not so far improved. Pulse 62 per min. B.P. S/D. 150/100 m.m. mercury. Five pounds weight have been lost since admission, but patient is easily managed, and appears in good bodily health.

CASE B.—Male, J.W.P., age 32. Admitted 29th January, 1934, as V.P., a steam-lorry driver having 3 weeks insomnia, was restless and complained of feelings of apprehension and fear. Weight 16 st. 4 lb. Pulse 70 per min. B.P. S/D, 148/100 m.m. mercury. Given soneryl tablets 2 t.d.s., p.c. and 3 at night. Good sleep was obtained. Three days later he complained (and it was observed also) that sleep was lacking. Three tablets soneryl t.d.s., p.c. and 3 at night brought about desired effect. Pulse 72 per min., B.P. S/D. 144/100 m.m. mercury.

*Conclusions* (from various cases).—Tab. Soneryl relieves restlessness and insomnia. It is speedy in action (half an hour roughly) and does not appear to be cumulative. Patients in poor health and condition taking 3 tablets t.d.s. become very drowsy and completely free from agitation, even comatose. Patients suffering from insomnia, taking two or three tablets only at night, get good sleep and some complain of feeling sleepy in the morning, but no other complaints of after effects have been made. High B.P. due to agitation and depression is lowered, otherwise the pressure is unaltered by medicinal doses. If the administration of soneryl ceases suddenly the condition of agitation and restlessness returns at once and therefore a gradual reduction of dose is recommended and observation of the patient made to determine the mental state meanwhile.

#### 4. *Treatment of General Paralysis by Tryparsamide.*—By Dr. C. R. F. HALL, M.A., and Dr. L. G. MILLAR PAGE.

Since October, 1928, tryparsamide has been used in the treatment of general paralysis of the insane at this hospital.

The drug has been given intravenously as a rule, but intramuscularly where the intravenous route was, for some reason, impracticable. The dose given was 3 gms. once a week for ten weeks, ten doses constituting a course. The total dosage of tryparsamide varied from 30 to 90 gms.

In some patients only one course was given; in others two, or even three, courses were necessary. Patients were kept in bed as a routine for 24 hours after injection. A slight rise of temperature usually occurred the same evening, but this rarely reached 102° F.

Twenty-four patients (21 males and 3 females) in all stages of general paralysis have been thus treated as soon as the diagnosis was established, and no attempt has been made to select them in any way. The blood and cerebro-spinal fluid have been examined by the Wassermann test and found positive in every case, save one, and in this instance the clinical signs left no doubt as to the case being one of general paralysis.

The duration of symptoms prior to admission to the hospital ranged from five weeks to three years, and the ages from 30 to 52 years. In no case was any optical complication observed. The optic discs were periodically examined while tryparsamide was being given.

Seven of the patients were discharged "relieved" from hospital and resumed their occupation; 3 of these relapsed, but after further treatment 2 of them were again discharged and have, so far, not returned, whilst the other died of double lobar pneumonia.

In nine other patients the disease was arrested, and though their mental condition does not permit their discharge, most of them are able to employ themselves in the hospital and to lead happy and useful lives therein.



Four patients did not improve at all in spite of two or three courses of treatment.

Four patients died of general paralysis.

In our experience tryparsamide seems to be a very safe drug and at no time did we have any untoward results from its exhibition; in fact, the general physical condition of the patients improved quite definitely while undergoing treatment; this seems to be a good point in its favour as compared with malarial therapy.

We feel that the results are encouraging and that for a small hospital, where cases of general paralysis are not very frequent, tryparsamide is, perhaps, a very satisfactory substitute for malarial therapy, which would, with the limited means at our disposal, be difficult to carry out satisfactorily.

5. *Case of Haematoporphyrinuria cured by massive doses of Sod. Bicarb. (grs. 30 t.d.s.).—By Dr. C. R. F. HALL, M.A.*

A female patient (L.E.K.), aged 33, admitted September 16th, 1931, had been taking trional, grs. 10, morning and evening for 46 days. She then passed urine containing haematoporphyrin and was given sod. bicar. grs. 30 t.d.s.

In 5 days the haematoporphyrin was less marked, but the total amount of urine passed was much diminished and for 22 hours she passed none at all, and then only  $\frac{3}{4}$ XX. A trace of blood and albumen was found in it at this time. A few days later several granular and amorphous casts were found.

Fifteen days after it was first noticed, no haematoporphyrin was found in the urine, no blood, albumen, or casts were detected, and except for a deposit of phosphates the urine was normal.

LVII.—FROM THE NOTTINGHAM CITY MENTAL HOSPITAL.

*General Report.*—By Dr. G. L. BRUNTON, Medical Superintendent.

*A.—Pathological and Biochemical.*

*Summary of Examinations.*

Urines: routine, including tests for acetone bodies, 826. Blood: total counts, 27; microscopical, 65; malarial parasites, 437; sugar estimations, 3; glucose tolerance curves, 9; urea estimations, 16; non-protein nitrogen, 8; cultures, 8; chloride, 117. C.s.f.: protein content, 6; chloride, 62; colloidal gold reactions, 71; bi-coloured guaiac tests, 69; globulin reactions, 72; cell counts, 50. Bacteriological: sputum, 333; faeces, 89; urine, 44; pus, 19; throat swabs, 9; milk supply, 6; food samples, 35. Milk analyses: total estimations, 56. Fractional test meals, 2; benzidine tests, 3. Post-mortem examinations, 56 (78 per cent. of deaths). Histology: pituitary glands cut and stained, 42; spleens, 6; brains, 6; liver, 1; kidneys, 1; cerebral tumour, 1; bladder carcinoma, 1; examinations for spirochaetes, 29.

*B.—Epidemic of Food Poisoning.*

An outbreak of food poisoning occurred on October 14th, 1933, the first case (a female) vomiting at about 2 p.m., and the first male case at 6.30 p.m. It seems certain that some of the patients had headaches in the forenoon of the 14th.

Thirty-four cases appeared as follows:—

October				Females		Males
14th	...	...	...	8	...	2
15th	...	...	...	2	...	9
16th	...	...	...	2	...	9
17th	...	...	...	1	...	1

The early symptoms or signs were headache, nausea (without vomiting), abdominal pain, vomiting and later diarrhoea with a little mucous. The temperature was raised in most cases—the highest being 101·8° F. (female)



and 103·2° F. (male). Six stools in 24 hours was the highest incidence of diarrhoea, and 21 did not have this sign.

On the 16th, culture plates were directly inoculated from the rectum by the laboratory staff of the mental hospital and specimens of egesta sent to the City Laboratory on the 17th. On the 20th in the hospital laboratory an organism had been isolated, and this was confirmed next day by the City Laboratory—both laboratories agreeing that by agglutination methods the organism was in every probability the bacillus aertrycke.

The patients affected (from 13 different wards) had been feeding in 9 different centres. This seemed to exclude one particular dish; although, as a matter of fact, samples of the consumed foodstuffs in the dietary were not available for investigation. Breakfast sausage taken on October 13th seemed a likely source.

Many of the patients were up and about again on the fifth day from onset, and only one patient, a debilitated male, died.

Food specimens are being examined in the hope that the source may yet be traced if it is still operating.

#### LVIII.—FROM THE SUNDERLAND BOROUGH MENTAL HOSPITAL.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of the examinations carried out during the year :—

Urines: routine, 185; bacteriological, 2; sputa, 18. C.s.f.: 12. Blood: W.R., 1; Widal's, 3; culture, 1; counts, 5; films, 32; sugar curve, 1; ascitic fluids, 6; hydrocoele fluids 2; pus, 1. Faeces: bacteriological, 7; milk samples, 1; laundry water samples, 2. Post-mortems, 13 (65 per cent. of deaths).

#### LIX.—FROM THE SWANSEA BOROUGH MENTAL HOSPITAL.

*Report of Research.*—By Dr. J. S. I. SKOTTOWE, D.P.M., Medical Superintendent.

##### A.—Clinical.

##### 1. *On the Pressure of the Cerebro-Spinal Fluid.*—By Dr. N. MOULSON, D.P.M., Deputy Medical Superintendent.

An investigation was carried out in cases representing various types of psychoses for the purpose of making observations upon the pressure of the cerebro-spinal fluid. Considerable care was expended in perfecting the technique, and every precaution was taken to see that, so far as possible, observations were made under standardised conditions in order to eliminate, to the greatest extent, the personal factor. A survey of the literature on the subject was made, and while there appears to be a considerable diversity of opinion, difficulty was found in obtaining any satisfactory general average figures which would allow for such important factors as the mental state of the patient at the time of examination, or the time elapsing between the needle being inserted and the pressure recorded. The investigations that have been made show that the views most commonly held on this subject are erroneous. It is not, for example, generally realised that the normal pressure of the intracranial cerebro-spinal fluid in an erect man is negative—that is, less than atmospheric.

Average pressures were recorded under standard conditions, and the variations produced by different factors were noted. For example, it was found that in 82 unselected cases the initial pressure averaged 174 mm. (of cerebro-spinal fluid), which within two minutes had settled (on the average) to a level of 134 mm.



The rate of fall of pressure as the fluid is withdrawn was determined in 75 cases. These figures showed an average fall from 130 mm. to 78 mm., due to the withdrawal of usually about 8 c.c. of fluid.

The variation produced by the pulse beat was found to average 2.3 mm., and it was noted that this variation appears to be unrelated to the systolic or diastolic blood pressure. The results of inspiration were interesting. Quiet natural inspiration, as a rule, produced a fall of pressure averaging 4 mm. Voluntary deep inspiration produced a large rise of pressure averaging 36 mm. Similar variations were noted as a result of speaking, shouting, coughing and following slight movements or variations of positions.

The conclusions reached as a result of this series of observations appear to refute the commonly accepted view that the pressure of the cerebro-spinal fluid is raised in cases suffering from general paralysis; the figures show that some cases of the dementia praecox type exhibit unusually low pressures; that several epileptics had raised pressures, whereas manic-depressives, senile cases, and congenitally feeble-minded persons showed no important divergences; above all, this work demonstrates how complex are the factors that must be taken into consideration, and that unless allowance is made for the mental attitude of the patient at the time of examination, the figures are likely to be valueless.

## 2. *Treatment of Sydenham's Chorea by Intra-muscular Somnifaine.*—By Dr. MADELINE R. LOCKWOOD.

Two cases of severe Sydenham's chorea in girls, aged respectively 23 and 13, and associated with mental symptoms of restless delirious type, were received from a general hospital—one as a temporary patient, and one as a voluntary patient under 16 years of age.

One case, H.V.S., admitted August 25th, 1933, had been ill for eight weeks, and as the result of her treatment she recovered completely and departed from hospital on October 7th, 1933. H.E.S., admitted on October 21st, 1933, had been ill for five months, and has now reached a stage of convalescence which will shortly be followed by discharge from hospital. It is noteworthy that in both these cases the chorea was so severe that the patients' lives were despaired of. It was impossible to nourish them by ordinary means and extremely difficult to secure the rest which was necessary to prevent exhaustion. References in literature to nirvanol and other barbiturates are numerous, but the hitherto technique has been to push this drug, producing nirvanol sickness. Somnifaine was used at Cefn Coed, and was pushed to the point of producing deep and long sleep; toxæmia being guarded against by glucose and insulin. It is claimed that somnifaine is less upsetting to the patient, and that but for its use the cases here cited would, very probably, have terminated fatally. Following the narcosis, resort was taken to treatment by continuous baths and occupational therapy. These cases demonstrate clearly that grave forms of Sydenham's chorea are satisfactorily provided for in the therapeutic equipment of a modern mental hospital when the illness has reached a stage which renders general hospital care difficult or even impossible.

## B.—*Psychotherapeutic.*—By Drs. SKOTTOWE, MOULSON, LOCKWOOD and MAELOR EVANS.

While the importance of psychological investigation is, undoubtedly, very great, this is not a line of research which lends itself readily to the formulation of general laws arrived at by a process of deductive reasoning, based on large numbers of cases (a method which is used almost exclusively in quantitative laboratory investigations).

A further difficulty is the immense amount of time which is demanded in each individual case for the purpose of distinguishing relevant from irrelevant material. Special psychological investigation and treatment



has been applied to a small group of patients. The results justify the broad general conclusion that in certain carefully chosen cases psychological treatment is the method of election, even when such cases are of an apparently unfavourable type. References to the following individual cases will serve to illustrate the justification for this statement.

CASE 1. Male, D.N.S., aged 33, single. Admitted December 12th, 1932.

This case illustrates how an apparently hopeless and demented case of Schizophrenia may respond to methods of treatment, which can only be described as essentially psychological, though not psycho-analytical, in the ordinary sense of the term.

This patient had been in at least three other Mental Hospitals prior to his transfer to Cefn Coed. He had been in hospital altogether for over five years, and his history as received from other hospitals was to the effect that he was apparently in a state of continued impulsive excitement with mutism, resistiveness, depraved habits, no regard for the ordinary proprieties, and refusal of food. On many occasions he had made determined homicidal attacks upon his nurses. So ill had he been, that it had been impossible, for some months, to keep any clothing on him, and for months at a time he had been nursed in a padded room.

The initial treatment was directed towards controlling his excitement and sustaining the patient's nourishment. This was achieved by means of heavy doses of sedatives and tube feeding (which in this case was very difficult).

It was soon found that he responded better, and was less impulsive, when nursed by female nurses, and accordingly he was nursed in an open female-nursed ward. Nevertheless, he continued for months in a state of resistive stupor, during which time one of us (N.M.), by means of continued attempts at reasoning and persuasion, and by the exercise of infinite patience, was able to gain his confidence. It soon became apparent that his content of thought was largely composed of severe psychic traumata, the nature of which need not be discussed here, and the majority of which were at a fully conscious level.

The next step was to induce a period of "twilight sleep," by means of intramuscular injections of barbiturates (sominifaine). It was necessary to continue these at six-hourly intervals for almost a month. During this time he remained in a state approaching deep coma, and required to be tube fed with glucose, egg and milk.

Still under barbiturates he was moved to a new ward; in this semi-hypnotic state he had now little power of resistance to the continued and persistent persuasion that he should take his food naturally.

One month from the commencement of the treatment he changed, quite suddenly, and took his food naturally. Within three weeks he was up, dressed in clothes (the first time for five years), walking about, attending and enjoying occupational therapy classes and the entertainments. Within another four weeks he was able to spend the day at his home, later week-ends, and he has now been discharged completely from hospital.

As the result of prolonged therapeutic conversations during the course of his illness, in which a great mass of irrelevant material was discussed, it was ascertained that the whole of the patient's behaviour (resistiveness, etc.) represented a disturbed attitude to his environment, the ultimate aim of which was, that if he could not encompass the death of others, he would encompass the death of himself.

The credit for this dramatic recovery of an apparently hopeless case is, to a large extent, due to both male and female members of the nursing staff, who, by the exercise of tact, great patience and persuasive efforts, which adjuvated those of the physician, created the favourable psychological background which rendered the more technical approach to the case capable of successful application.

CASE 2.—Male, D.Y.S., aged 32, single. Out-patient.

This case illustrates the results of Psychological Exploration, by word-association and free association, in a chronic neurotic subject with symptoms of six years' duration; spontaneous analysis, with abreaction, occurred with apparent recovery resulting.

The patient complained that any excitement caused violent tremblings and heated flushings; he complained of palpitation and flatulence, and stated that on several occasions in the street everything had gone black, and he thought that he was "going off." He had been ill for six years.

The results of an examination by one of us (M.E.) showed the case to be one of anxiety attacks occurring in a neurotic subject. Being of six years' duration, therapeutic efforts along psychological lines were regarded as a rather forlorn hope. Nevertheless, as there was no apparent physical cause and nothing in the environmental history to indicate environmental distress, no other rational form of treatment appeared



to offer itself, and a moderately deep psychological exploration was undertaken by one of us (I.S.). It was assumed that the attacks of anxiety were the conscious concomitants of a subconscious fear or wish. Two early sessions were occupied by word association tests, in which the most obvious complex indicators were in reference to money, prison and father. On free association being adopted along the lines indicated, it was found, after several sessions, that the patient considered that his mother had married beneath her; that his father was, in effect, a shiftless and unworthy character, whom the patient regarded with contempt (both parents have been dead for a matter of years); and that this mother had always been his "defender."

Further free associations eventually led to the recounting of a fantasy, which the patient had, in which he saw himself arriving, with a girl S——, in London, where he fixed up an important business contract, married the girl, and proceeded on his honeymoon. In the fantasy the patient's relation to S—— was not that of a man to wife, but essentially that of a child to adult, for S—— helped him with all his business, and it was through her that he was able to arrange further contracts. Indeed, this fantastic honeymoon was practically a continued business conference in which S—— was the managing director, and the patient was the clever underling who gave birth to new ideas. A noteworthy point in this fantasy (which was given in minute detail and very freely) was the complete omission of all reference to the physical aspects of marriage.

It was next ascertained that this girl S—— did, in fact, exist; that the patient was anxious to marry her; that he had never had any conscious physical urges towards her, and that often when he contemplated his proposed marriage closely, he would have an attack of anxiety ("I'm terrified I won't win her"). Further free associations produced a considerable amount of irrelevant material, and eventually, several weeks later, he was asked to recall his emotional attitude towards his mother. Immediately after this, he was asked to recall the fantasy of his journey to London. He had a pictorial image of S——, and presumably because this was a contiguous association in time with his emotional attitude towards his mother, he quite suddenly and unexpectedly said: "I see it all now; S—— is my mother," and with considerable abreaction he revealed spontaneously an Oedipus situation of which he had been quite unconscious. So spontaneous was this, that the physician (who had been regarding the case more as a psychological experiment than as a therapeutic effort) was almost as surprised as the patient.

In further conversation the patient realised clearly what his attitude to S—— had really been, and he appreciated emotionally that his attacks of anxiety were dependent upon the fact that his original attachment to S—— had been formed because of her symbolisation of the maternal protection, which he required, and that his emotional attitude towards S—— was completely incompatible with the other instincts which must obviously be aroused in the ordinary course of events. He realised that his fear was really "I will win her," not "I won't win her," as he had consciously formulated. He can now contemplate marriage with equanimity, the adult emotional attitude having apparently replaced the childish one, once the significance of the whole situation was appreciated by the patient.

In order to have an objective check on the progress of the case, the co-operation of the patient's own doctor was invited, and he was asked to report in an absolutely unbiased way on the patient's progress. It transpired that both he and the patient's friends spontaneously remarked upon the complete change which had occurred in the patient, and that from being something of a neurotic wreck, he had become again an ordinary person with a reasonable amount of self-confidence and was free from anxiety attacks.

Treatment lasted for approximately three months.

*C.—Pathological and Biochemical.*—By Dr. A. F. S. SLADDEN, M.A., Visiting Pathologist, and Mr. A. DIGNAM, Technician.

#### *Routine Examinations.*

These numbered 2,351 in all. Bloods, cerebro-spinal fluids and urines have furnished the bulk of the routine work; post-mortems have numbered 35; the visiting pathologist attended any of special interest or importance, the remainder were performed by members of the resident medical staff. The following is a detailed list of routine work performed in 1933:—

Blood: red and white cell counts, 79; differential counts, 49; films for parasites, 28; cultures, 4; fragility of R.B.C., 2; agglutination tests, 3; urea, 29; glucose, 21; glucose tolerance curves, 10; Van den Bergh tests, 3; Wassermann reactions, 256. C.s.f.: cell counts, 100; globulin tests—Ross Jones, 120; Pandy, 48; acetic anhydride tests, 46; protein estimations, 77; chloride estimations, 88; glucose estimations, 4; urea estimations, 2; Lange gold curves, 70; colloidal benzoïn tests, 56; cultures, 1.



Urines: routine examinations, 600; microscopical examinations, 95; bacteriological examinations, 25; sugar examinations, 361; urea estimations, 6; examination for ketosis, 84; chloride estimations, 3; urea concentration tests, 13. Miscellaneous: fractional test meals, 3; faeces (bacteriological), 22; sputums for tubercle bacilli, etc., 31; histological sections, 36; sundry examinations of pus and fluids, 21. Post-mortem examinations, 35 (83·3 per cent. of deaths).

*On the Amylolytic Power of the Cerebro-spinal Fluid.*—By Dr. N. MOULSON, D.P.M., Deputy Medical Superintendent.

The difficulties of this investigation are largely technical; in the first place it was necessary to evolve a new method for the estimation of small degrees of amylolytic (diastatic) power; by means of this technique it is now possible to estimate a diastatic value as low as ·03 units per cubic centimetre; this is below the normal range of the cerebro-spinal fluid.

Observations were made on 55 cases, and values in most cases of from ·05 to ·09 units were found. Occasional cases appear to show abnormally low figures (·03). For this no cause can at present be suggested. Some cases were found to have a high diastatic content (·10 to ·13). Such patients are almost invariably those suffering from such definite organic conditions as tuberculous meningitis, neuro-syphilis, and cerebral arteriosclerosis.

The results recorded by recent German observers cannot be confirmed; using the technique they describe (but with adequate controls), the writer has shown that their method cannot be accepted as wholly satisfactory, and the claims they put forward have not been substantiated. On the other hand, it was found that Kasahara and Takaishi had evolved a somewhat similar technique for the estimation of the amylase of the cerebro-spinal fluid of dogs, and that their results showed much the same normal range of levels. It is claimed that such work, independently carried out and reaching almost similar conclusions, is a good criterion of the accuracy of each set of results.

The suggestion is made that the diastase content of the cerebro-spinal fluid may really be regarded as a measure of meningeal permeability.

The main purpose of this preliminary paper has been to describe the technique employed; it is suggested that this method is better than that of Kasahara and Takaishi by reason of its better end point.

A larger number of cases must be examined before the precise significance of the various changes can be explained. Further researches are in progress.

*Dental Toxaemia.*—By Dr. MAELOR EVANS and Mr. HORACE BOYLE (Visiting Dental Surgeon).

A study is being made of the relative values of wholesale and spaced methods of extractions of infected teeth in psychiatric cases, where dental toxaemia appears to be a causal factor. A series of cases where the extraction of teeth has been performed, one at a time, have been intensively investigated.

Following each extraction the following observations are made:—(1) the degree of pyrexia is noted; (2) red blood cell count, differential leucocyte count, haemoglobin percentage, and a differential polymorphonuclear count by the Arneth method; (3) cultures are made following each extraction, and the opsonic index determined.

The clinical results are being compared with those obtained in a series of cases in which vaccines are given and the wholesale method of extraction performed.

The suggestion underlying these researches is to determine whether a better response can be induced in a patient by inoculating him by natural means with his own toxins (a process which normally follows each extraction) than by the more usual method of total extraction of septic teeth at one or two sittings, and vaccine therapy.



So far as the results at present to hand go, there would appear to be a strong case for slow spaced removal, in the sense that there is already clinical and serological evidence that detoxication is more complete.

LX.—FROM THE WEST HAM BOROUGH MENTAL HOSPITAL.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of the laboratory records for the year :—

Urine examinations, 226 ; blood counts, 2 ; Wassermann reactions : c.s.f., 38 ; blood, 125 ; microscopic examinations of slides and tissues, 46 ; Lange colloidal gold test, 33 ; colloidal gold test, 15 ; sugar estimations, 9 ; albumen estimations, 33.

There were two cases of general paralysis of the insane treated with Pyrifer during the year.

LXI.—FROM THE BARNWOOD HOUSE HOSPITAL, GLOUCESTER.

*General Report.*—By Dr. J. K. C. LIDDELL, Assistant Medical Officer.

*Focal Sepsis.*—Six cases were investigated by Dr. E. N. Davey, employing the pathogen selective technique. In one case a very heavy growth of streptococcus haemolyticus was obtained from the faeces in a patient with a considerable degree of anaemia. A vaccine was prepared and is being given.

The other cases gave no definite indications for treatment.

*Blood Iodine.*—The iodine content of the blood of a patient of the schizophrenic type, suffering from recurrent attacks of confusion with marked excitement, was investigated in London, and resulted as follows :—

Free from excitement	...	Insol. Iodine	3	gamma per 100 c.c.
		Sol. Iodine	6	gamma per 100 c.c.
During excitement	...	Insol. Iodine	3·5	gamma per 100 c.c.
		Sol. Iodine	7	gamma per 100 c.c.

This patient is now having a six months' course of tryonormon, but so far there has been no improvement in his mental condition.

*Routine Laboratory Work.*—The following is a summary of the examinations carried out during the year :—

Urine : routine, 343 ; indican, 67 ; bacteriological, 6. Faeces : bacteriological, 6. Blood : Wassermann reaction, 1 ; total counts, 7 ; iodine, 1. C.s.f., 1. Bacteriological swabs and cultures, 24.

LXII.—FROM THE BETHLEM ROYAL HOSPITAL.

*Report on Research Work.*—By Dr. J. G. PORTER PHILLIPS, F.R.C.P., Physician Superintendent.

A.—*Pathological Department* (Dr. C. LOVELL, M.C., Pathologist).

*Changes in Blood Fat.*—This is so obscured by the uncertainty as regards diet that, at present, no conclusions can be based on its estimation.

*Investigation of some Specific Toxins in cases of Melancholia.*—Two definite groups have been isolated and will shortly be offered for publication.

*The Significance of Small Measurements.*—An analysis of the results of treatment in 762 cases has led to a plea for attention to small degrees of abnormality on the physical side. "The Significance of Small Measurements" was published in the *Proceedings of the Royal Society of Medicine*, 1933, Vol. XXVI.

*Routine Work.*—The routine work is undergoing a steady change. The amount of histological work required is small, the routine tests such as the W.R. are steady, according to the number of admissions, and the biochemical investigations are increasing rapidly. In this hospital they have increased by 200 per cent. on last year.



B.—*Psychological Department.*

*Spearman Factors.*—The work reported last year has been continued and was reviewed at a general meeting of the British Psychological Society held at the hospital under the chairmanship of Dr. J. G. Porter Phillips, on June 17th. The papers read at the meeting by Dr. W. Stephenson, Miss C. A. Simmins, M.A., and Miss G. Studman of University College, London, Dr. W. H. de B. Hubert of Maudsley Hospital, Dr. D. M. Kapp, formerly of Horton Mental Hospital, and Dr. Murdo Mackenzie of Bethlem Royal Hospital, have been accepted for publication in the *British Journal of Medical Psychology* and will appear shortly under the general title: "Spearman Factors and Psychiatry."

Other reports of the work have appeared as follows:—"Stages in Experimental Psychiatry No. 4," sub-title "Deterioration of G in Psychotic Patients." *The Journal of Mental Science*, October, 1933, Vol. LXXIX, No. 327, pages 704-734.

Other papers will appear shortly in the *Journal of Mental Science* and *British Journal of Psychology and Educational Psychology*.

*P. Factor.*—As a special research connected with the above, Miss E. McDonnell, B.A., of University College, London, has commenced a more intensive study of P. factor in schizophrenia.

*Attitudes towards Time.*—Dr. Nathan Israeli, Fellow of the Social Science Research Council (U.S.A.), 1932-33, using a questionnaire method, collected a large amount of data on the mental attitudes of patients towards past, present and future happenings and possibilities. Dr. Israeli is at present engaged in working up this data.

*Psychology of Perseveration.*—It is of interest that the British Association for the Advancement of Science has formed a sub-committee to report on the psychology of perseveration. Dr. Stephenson is a member of the committee, with Professors Aveling, S. C. Bartlett, Dr. Collins and Mr. E. Farmer. A considerable amount of the work attacked at Bethlem will form the subject of Dr. Stephenson's report on perseveration to the sub-committee.

## LXIII.—FROM ST. ANDREW'S HOSPITAL, NORTHAMPTON.

*General Report.*—By Dr. D. F. RAMBAUT, Medical Superintendent.

The value to the whole hospital of Wantage House Reception Hospital has been maintained and even enhanced during the past year. Not only have all the patients resident at Wantage House, undergone a complete clinical examination supplemented by laboratory tests and X-ray examinations, but a larger number of patients from the main hospital have received similar investigations.

The plan of having separate medical officers for the clinical and pathological departments at Wantage House, which was inaugurated in October, 1933, has been most successful, and although the departments are under separate officers there is close co-operation between them in the investigations carried out on each patient.

The admission rate has been well maintained and is the same as last year, 48 patients having been admitted to Wantage House during the year. On December 31st, 1933, there were 19 ladies and 15 gentlemen in residence.

The hydrotherapeutic department continues to be the most valuable unit in the hospital from the standpoint of treatment. It is in constant use and there appear to be few types of mental disorder in which hydrotherapy in some form is contra-indicated. For patients belonging to the arteriopathic group, for example, the prolonged immersion bath is one of the best and safest methods on which to rely for combating the distressing insomnia which is such a feature of their illness. These baths would also appear to retard the rate of their deterioration by gradually



reducing the blood pressure. As arteriopaths usually retain insight into their condition, they are especially able to appreciate the benefits of this treatment and have frequently expressed their gratitude for the relief they have obtained. I may add that not a few, subsequent to discharge, have continued to pursue their hospital hydrotherapeutic routine.

*A.—X-Ray Department.*—By Dr. D. J. O'CONNELL and Mr. E. TRANMER.

During 1933, 209 patients attended the X-ray Department, of whom 58 had radiograms taken of their teeth. Altogether 352 radiograms were taken during the year. Forty-six patients were examined with a view to discovering sepsis in the accessory sinuses of the skull. Of these, one was referred on suspicion to a consulting rhinologist. He considered that the primary source of infection lay in the tonsils. These were removed and subsequently the sinuses were clear on X-ray examination.

In view of the importance of sinus infection in the psychoses and the divergent figures as to its occurrence which have been reported recently from Birmingham and Cardiff, it may be relevant to record here the statistics relating to sinus infection over a period of six years on all admissions to Wantage House. During this time 331 patients had X-ray stereoscopic examinations carried out for evidence of sinus infection. Of this number, 27 were referred to a consulting rhinologist (Mr. E. Broughton Barnes, F.R.C.S.). He carried out exploratory puncture for diagnosis or evacuation in 11 of these (3·3 per cent.). The sinuses explored were: antra, 6; sphenoidal, 3; antrum and sphenoid, 1; antrum and ethmoid, 1. In two of these suspected antra the fluid withdrawn was sterile, leaving 9 cases (2·7 per cent.) in which the infection was verified.

In the investigation of mental disorders where, at times, by reason of his malady the patient is incapable of communicating his symptoms, aids to diagnosis by X-rays are of even more service than in cases uncomplicated by mental aberration. To illustrate this point a brief résumé of three cases is given in which the diagnosis was, and could only have been, established by means of X-rays:

1. The Rev. M. had a meningioma which was situated in the frontal region and produced symptoms only of mental depression, defective concentration and emotional instability. X-ray examination revealed a tumour in the frontal region. He was referred to a neuro-surgeon who operated on him with such success that he was subsequently able to resume his professional duties.

2. Mrs. G. had suffered for some years from mental depression, accompanied by numerous supposedly hypochondriacal ideas. In addition she had at times contemplated suicide. A pyelogram revealed a large encysted stone in the kidney to which we were able to attribute her symptoms. She was successfully operated on, and subsequently returned to her home recovered.

3. Mrs. B., a middle-aged woman, had mental symptoms which suggested a chronic psychosis, and in addition such vague physical symptoms that they defied accurate clinical diagnosis. Cholecystography by the use of Opocal showed a distended gall bladder. She was operated on and at the operation a mucocele containing numerous gall stones, one of which was impacted in the cystic duct, was discovered and removed. Since the operation her mental condition has rapidly improved and she will, we hope, be discharged shortly, recovered.

The X-ray plant has been of great service during the year in the diagnosis and treatment of fractures, the localisation of foreign bodies and tumours, and in the refutation of statements that foreign bodies have been swallowed.

*B.—Electrical Department.*

Artificial sunlight treatment was given to 42 patients, an average of ten irradiations being given to each patient. Diathermy was used in six cases to our satisfaction.

Three patients received radiant heat treatment, a course of ten treatments being given to each patient.



C.—*The Laboratories.*—By Dr. RUBY O. STERN and Mr. C. WEBB.

The number of routine examinations made during 1933, and of which details are appended, was 1,864.

### 1. *Biochemical.*

Blood counts: full, including estimation of haemoglobin, red and white cell count and differential leucocyte count, 107; leucocyte count and differential count only, 13; estimation of haemoglobin and red cells only, 1. Blood: estimation of calcium, 50; of alkali reserve (Van Slyke), 50; of sugar, 55; of non-protein nitrogen, 48; of urea, 50; of phosphates, 23; of uric acid, 9; of cholesterol, 153; of the Van den Bergh reaction, 45. C.s.f.: cytological and chemical examination, 33. Fractional test meals, 22; glucose tolerance tests, 36. Urines: 24-hour specimens for quantitative and qualitative examination and for microscopy, 391; single specimens for a full examination, 125. Faeces: biochemical and microscopical examination, 79. Vomited material: chemical and microscopical examination, 3. Kahn reaction: on bloods, 106; on c.s.f., 27.

### 2. *Bacteriological.*

These examinations numbered 255, comprising cultures as follows:

Faeces, 173; resting gastric juice, 21; urines, 23; throat, 17; cervix, 7; pus, 6; blood, 4; pleural fluid, 2; dental, 1; nasal, 1; sputum examinations, 8. Thirty autogenous vaccines were prepared: from faeces, 20; from resting juice, 4; from the throat, 2; and from the urine, teeth, blood culture and sputum, 1 each.

### 3. *Histo-pathological.*

Twelve post-mortem examinations were made during 1933. Whenever possible a complete autopsy was performed and microscopical sections of all diseased organs were prepared, which necessitated the cutting of 60 blocks of celloidin material and 82 of paraffin. Many illustrations of interesting conditions found at post-mortem or microscopically were taken for inclusion in the post-mortem register, this being considered a useful and reliable method for future reference.

The detailed study of several cases was undertaken, one of which, a case of pernicious anaemia with lesions of the spinal cord, is fully reported elsewhere in this report.

Another case of interest was that of Mrs. T., a patient aged 78, a senile dement, who clinically presented the signs of a malignant tumour of the ovary. She died quite suddenly after a brief period of coma. At post-mortem an enormous tumour of the right ovary, weighing 20 ounces, was removed from the right iliac fossa. The tumour had seeded itself all over the peritoneum, giving rise to a malignant peritonitis, about two pints of sanguinous fluid being present in the peritoneal cavity. In addition, the tumour had invaded the ilium, which was so softened by the growth that it could easily be cut with a knife. Histologically the tumour was a typical papilliferous carcinoma of the ovary showing cystic degeneration. In spite of the widespread metastases and the highly malignant nature of the tumour, it did not kill the patient. Examination of the brain revealed that she died as a result of cerebral haemorrhage of vascular origin, not of haemorrhage into a metastasis in the brain. The left cerebral hemisphere was almost completely destroyed by the haemorrhage, but from the appearance of the corpus striatum it is probable that the bleeding started as a result of rupture of the usual "artery of cerebral haemorrhage," the lenticulostriate artery. Another, quite separate haemorrhage had occurred in the pons, on the left side. Microscopical sections of the edge of this haemorrhage and of the less fragile portions of the damaged cerebral hemisphere established with certainty that the haemorrhage was not due to haemorrhagic degeneration in a tumour. All the arteries at the base of the brain were atheromatous.

A case of some pathological interest, owing to the rarity with which tubercular lesions are found in the liver, was that of Mrs. C., aged 32, a patient with dementia praecox, who died from pulmonary tuberculosis.



At post-mortem the lesions were apparently confined to the thorax, where confluent areas of fibro-caseous tuberculosis were demonstrated in the lungs. Although there were a few enlarged translucent glands in the mesentery, no obviously tuberculous foci were seen in the abdomen, and microscopically these glands were free from tubercle. Sections of the spleen and kidneys gave no evidence of tuberculous infection, but in sections of the liver numerous miliary tubercles were seen.

D.—*Cases of Unusual Occurrence.*—By Dr. D. J. O'CONNELL and Dr. RUBY O. STERN.

1. Three cases of ocular palsies associated with acute confusional attacks due to alcohol came under observation during the year. A short paper entitled "Cranial Nerve Palsies as a Manifestation of Peripheral Neuritis in Alcoholic Insanity," by Drs. D. J. O'Connell, J. McLeman and R. O. Stern, based on these cases, will appear in a forthcoming issue of the *Journal of Mental Science*.

2. *A Mediastinal Tumour in a Case of Non-systematised Delusional Insanity.*—Mrs. J., aged 52, was admitted on September 26th, 1933. Beyond the fact that she was under weight, due to her persistent refusal of food, her physical condition, on admission, was good. A routine blood count showed a leucocytosis of 14,000, with 73 per cent. of polymorphonuclears, and subsequent attempts to account for this led us, as part of our routine practice, to endeavour to perform a test meal. The Ryle's tube could not be passed, however, despite the patient's co-operation, and a paroxysm of coughing and vomiting induced by our efforts to pass it resulted in the expulsion, per os, of small pieces of a friable tumour-like mass without the incidence of visible haemorrhage. Direct films made from a small piece of the ejected material revealed the presence of tumour cells, and subsequently frozen sections proved the material to consist of carcinoma cells and non-striate muscle. The type of carcinoma cell did not in any way resemble that found in gastric carcinoma; it approximated rather to one form of carcinoma of the bronchi. At this stage a careful clinical examination of the chest failed to disclose any physical signs, and the patient had no symptoms. Her chest was then X-rayed, and the picture revealed a large tumour occupying the posterior mediastinum, extending more to the right side than to the left, its upper and lower limits being apparently the third thoracic vertebra and the diaphragm. A bismuth meal was then given and its course observed under the fluorescent screen. The meal was seen to follow a circuitous route. At two points it passed out of the oesophagus into the tumour mass, outlining its extent by radiating striations of bismuth. The oesophagus itself appeared to pass through the centre of this mass and to be pulled considerably to the right side. There would therefore seem to be a fistulous communication between the oesophagus and the tumour. Bismuth from this meal was still visible in the tumour mass a week later. The patient's attitude to food changed soon after admission to hospital, and at this time she was taking ordinary meals without any apparent discomfort.

On October 28th, for the first time it was possible to demonstrate physical signs in the chest. Cardiac dullness was diminished on the left side and increased to the right. There was a tracheal thrill and the trachea was displaced to the right. The breath sounds were increased on the right side anteriorly, whilst behind there was a patch of dullness on the right side between the vertebral borders of the scapulae. Over this patch fine inspiratory crepitations could be heard.

Contrary to our expectations the general condition of the patient improved, and by December 28th she had gained twelve pounds in weight without, however, there being any change in the clinical signs, and an X-ray taken at this time showed that the tumour had enlarged slightly to the right. There are still no pressure symptoms, and beyond a slight



occasional cough the patient has so far suffered no discomfort, in spite of the fact that fortnightly X-rays show that the tumour is steadily growing. The patient herself is insistent that she is "quite fit." Repeated blood counts have resembled the first in that they show a polymorphonuclear leucocytosis; the last one to the extent of a total of 22,000 white cells, of which 79 per cent. were polymorphonuclears. The Kahn reaction has been negative on two occasions. The blood chemistry has been investigated with negative results, the only finding of interest being the low serum cholesterol, 105 mg. per cent.

This case seems to be of interest in so far as it is difficult to localize the exact origin of the tumour. Direct communication with the lung appears unlikely since the constant passage of food into the tumour which we have seen to occur under a screen would by this time have produced a fatal inflammatory pulmonic condition did such a communication exist. Against the possibility of the growth having originated in the oesophagus is the entire absence of dysphagia and the wide extent of the growth. We are forced to the conclusion that the growth is primarily of mediastinal origin and has invaded and eroded the oesophagus. The lack of symptoms in this case is very striking, as the patient, to demonstrate her physical fitness, will dance and sing, and for other reasons will shout lustily for hours on end.

Since the above was written, two months ago, signs of cardiac and respiratory embarrassment have appeared, and the patient is losing in weight. Nevertheless she is entirely indifferent to her condition and makes no complaint of any discomfort.

*E.—Pernicious Anaemia and the Psychoses.*—By Dr. NORMAN R. PHILLIPS, D.P.M.

In 1931, three cases of severe anaemia associated with mental disorder were reported, and it was then pointed out that not only were mental symptoms commonly met with in the severe anaemias, but that they constituted a specific mental syndrome characterized by delusions of persecution and suspicion: the delusions being more particularly directed against those who were responsible for the patient's welfare. Since then the following case has been under observation and treatment. It is significant that the mental symptoms in this case conform very closely to the specific syndrome mentioned above. It is especially important to remember that this particular psychosis may be cured if the underlying physical condition, viz., pernicious anaemia, be diagnosed and properly treated by modern methods.

*CASE 1.*—Miss R., age 42, was admitted into St. Andrew's Hospital as a voluntary patient on December 5th, 1932.

*Family History.*—Two distant cousins mentally affected.

*Personal History.*—Twelve years ago had a nervous breakdown, also twitching of the legs. She was treated in a nursing home by psycho-analysis. Five years ago she became worse physically, with weakness of the legs. She quarrelled with her sister, said all her troubles were someone else's fault, etc. In 1929 said to have had paralysis with cold feeling round abdomen and down both legs. In October, 1932 it was suspected she had tabes dorsalis. A Wassermann was done and proved negative. For 14 months previous to admission she had become "impossible to live with." She had delusions of persecution. She had threatened violence to herself and to her mother. She attacked her sister with a stick. She was domineering, "tried to rule the roost," etc.

*State on admission. Mental.*—She was mildly confused. She was very talkative, wandering from one subject to another. She said she had been dead for five years. She had delusions of persecution, and said she had been brutally treated at home; that she had been starved all her life, often only having dry bread for days. She said that her sister flung her down stairs and kicked her: that they accused her of earning money immorally.

*Physical.* She was suffering from pernicious anaemia. She was rather emaciated: skin had a lemon tint, glossitis was present. Blood examination: red cells, 3,208,000 per c.mm.; white cells, 4,600; haemoglobin, 60 per cent.; colour index, 0.9; marked



poikilocytosis and anisocytosis. Achylia was present. She also had subacute combined degeneration of the spinal cord (tabetic type). She was ataxic; Romberg's sign was present.

*Treatment.*—The principal treatment consisted in fresh liver ( $\frac{1}{2}$  lb. daily); and dilute hydrochloric acid (1 drachm t.d.s.).

*Progress.*—While still retaining her delusions about her family, she soon developed delusions of persecution against the doctors and nurses. She was self-centred, vain, and she had a craving for sympathy. She was subject to acute states of excitement during which her delusions and illusions became much intensified. At the end of December, 1932 she was certified as she was no longer fit to remain on a voluntary basis. She became exalted and domineering. She was aggressive and abusive. She made all kinds of groundless complaints and she would tell deliberate falsehoods in order to gain her own ends. She was plausible and she made a considerable amount of mischief with her pen as well as with her tongue. Early in April, 1933 she began to show improvement both physically and mentally. She gradually lost her delusions, and she became less restless. She became co-operative. This improvement was gradual but steady. The improvement in her physical state was shown by her increase in weight from 8 st. 8 lb. (on admission) to 10 st. (in June). The red cell count rose from 3,208,000 to 4,864,000 per c.mm. The ataxia became much less noticeable and the paraesthesiae disappeared. The deep reflexes still remained absent.

June 27th, 1933 she went out on trial.

August 5th, 1933 she was discharged recovered.

CASE 2.—A patient with pernicious anaemia, whose case was fully reported in 1931, died of uraemia in 1933.

Summary of this case. Pernicious anaemia was diagnosed whilst she was in Maidstone Mental Hospital in 1927. Under liver treatment she improved, and was discharged from certificates after 6 months. Unfortunately the treatment was discontinued. In 1929 she had a relapse, and later she was admitted to St. Andrew's Hospital. She was suffering from delusions of persecution and suspicion. She had hallucinations and occasional attacks of delirium. Blood examination showed that she had pernicious anaemia. C.N.S. examination showed the presence of subacute combined degeneration of the cord (tabetic type). She was ataxic and there was absence of all deep reflexes, including the plantar reflex. There are two factors which may account for the chronicity of the blood disease and the mental symptoms in this case, viz.: (1) heredity; and (2) interruption of the treatment for two years whilst the patient was at home.

#### *Pathological Report.*—By Dr. RUBY O. STERN.

An autopsy was performed four and a half hours after death. The state of nutrition was good.

*Thorax.*—The right lung was adherent at the base and its lower lobe was partially consolidated. The upper and middle lobes were oedematous. The left lung was cedematous and on section a large amount of frothy fluid was expressed from the alveoli.

The heart was rather small, weighing 9 ounces. The heart muscle was red in colour, and of normal consistency. The peri-mural fat was not unduly yellow in colour. The valves were all competent. The aorta was healthy.

*Abdomen.*—The stomach wall was thickened and on opening into it the vessels in the sub-mucosa were seen to be greatly engorged. The liver was slightly enlarged, weighing 42 ounces. On section it appeared rather pale in colour.

The spleen was very slightly enlarged, weighing 5 ounces. It was dark red on section and greatly congested.

The kidneys were both enlarged, the right weighing  $6\frac{1}{2}$  ounces, the left 7 ounces. The capsules stripped easily, leaving smooth surfaces. On section the cortex was diminished and the cortical markings were indistinct. The calyces appeared unduly large and both kidneys were congested.

The supra-renals were small and showed only post-mortem changes.

*Brain and spinal cord.*—The dura mater was somewhat adherent to the skull. The pia-arachnoid was slightly thickened. The cerebral arteries were healthy. The ventricles contained a small quantity of clear fluid. Apart from slight congestion the brain appeared normal to naked eye examination. Weight of brain 48 ounces.

The spinal cord was not unduly large. On transverse section in the mid-dorsal region the posterior columns appeared grey in colour. The spinal cord, together with several dorsal root ganglia was removed for microscopical section. A short length of the right common peroneal nerve was also taken for section.

*Microscopical examination.*—The stomach showed much lymphocytic infiltration



of the mucosa and sub-mucosa with much engorgement of the sub-mucosal vessels, but there was no evidence of any atrophy of the glandular tissue.

*Liver.*—The Kupffer cells were large, but no free iron could be demonstrated in them. The parenchymal cells were swollen, and in many, early fatty changes were observed.

*Heart.*—The muscle fibres were small, but no deposits of fat could be detected either in, or around them.

*Kidneys.*—The glomeruli appeared to be diminished in number, but those present seemed normal. Many tubules were undergoing degeneration, having lost their nuclei. No free iron could be demonstrated by the Prussian blue reaction.

*Nervous system.*—In sections of the spinal cord stained by the Kultschitsky-Pal method, there was seen myelin degeneration strictly confined to the posterior columns of the cord. This degeneration was most severe in the lower cervical region, where the medial portions of the posterior columns were almost completely demyelinated. In the medulla, the pons, and the mid-brain, the fibres of the fillet appeared normally myelinated. From the cervical region, the degeneration grew progressively less as it was traced downwards in the cord, till at the level of the fourth to fifth lumbar segment no demyelination whatsoever was found. At no level in the cord was there any evidence of involvement of the lateral or antero-lateral columns. That the lesion in the posterior columns was of long standing was manifest by the absence of axis cylinders in the affected areas, as demonstrated in Bielschowsky preparations. Also, no products of myelin disintegration could be stained by the Scharlach R. method, the breakdown of myelin being therefore complete, a process which must have required many months for its accomplishment. Slight overgrowth of neuroglia had taken place in the affected parts of the cord, a rather unusual finding, as neuroglial replacement does not, as a rule, occur in this disease. The nerve cells in the anterior horn appeared healthy throughout the length of the cord.

In the brain there were no characteristic pathological changes. The large nerve cells in the cerebral cortex were found to be loaded with lipochrome pigment, a condition which is associated with many forms of poisoning of cerebral nerve cells and indicates a functional metabolic disturbance. Otherwise the nerve cells appeared healthy. No senile plaques such as are occasionally found in the cortex in sub-acute combined degeneration were to be discovered in this case. Myelination of the cortical white matter was normal.

Sections of the common peroneal nerve did not reveal any evidence of peripheral neuritis. This examination was especially made in view of the severity of the sensory symptoms clinically. Several posterior root ganglia from the dorsal and lumbar regions were also examined by the Kultschitsky-Pal method, but with negative results.

#### *Comment on the Pathological Findings.*

Absence of the characteristic iron-containing pigment from the liver was not unexpected in this case, as the patient had been under treatment with liver extract up to a few days before her death. One of the earliest effects of this treatment is that the body is enabled to use the iron which has been deposited in the cells of the reticulo-endothelial system, especially in the Kupffer cells of the liver, for the formation of haemoglobin. Diebold has called attention to the absence of free iron from the liver in patients who have died during a remission following the modern treatment of pernicious anaemia.

The degeneration of the kidney tubules found microscopically confirmed the clinical diagnosis of the terminal complication, uraemia. (Two days before death the blood urea was 125 mg. per cent. and the urine contained numerous granular and hyaline casts.)

The lesions in the nervous system call for little comment. Since the introduction of modern methods of treatment it would seem that the spinal cord lesions are more frequently confined to the posterior columns than was formerly the case. Greenfield and O'Flynn reported last year that of nine cases of sub-acute combined degeneration which had come to autopsy since 1929, in three the disease process had been limited to the posterior columns, whereas during the ten years previous to 1929 in not a single case had the disease been so limited. They suggest that whilst liver therapy is unable to influence the disease process in the posterior columns which have already been attacked, it can yet prevent the subsequent involvement of the lateral and antero-lateral columns. This view



would appear to warrant acceptance; at all events it well explains the severe, long-standing degeneration of the posterior columns with lack of involvement of any other tracts in our case. Stimulated by the contribution of Carmichael to the recent discussion on sub-acute combined degeneration of the cord at the Royal Society of Medicine, we carefully examined the common peroneal branch of the sciatic nerve and also several posterior root ganglia for evidence of a peripheral lesion. No evidence of this was forthcoming. All the peripheral nerve fibres appeared well myelinated. It is obvious that many more observations of this kind must be made before any conclusions can be drawn regarding the possibility of a peripheral lesion being commonly present in cases of "sub-acute" in which there is no involvement of the lateral columns. This one observation is simply recorded as an example with which to support the negative evidence for such a contention.

Attempts to discover any characteristic changes in the brain such as those described by Woltman were unsuccessful. In the cerebral cortex the presence of large quantities of lipochrome pigment in the nerve cells was merely taken as an indication of a functional disturbance of cellular metabolism such as may occur in many forms of poisoning of the nervous system, as, for example, in alcoholism or pellagra. This was the only abnormality detected in the brain.

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F.—*Biochemical Investigations*.—By Dr. RUBY O. STERN and Dr. D. J. O'CONNELL.

The interest which has been aroused by Duncan's work on the cholesterol content of the blood in the manic-depressive psychosis led us to introduce into the laboratory the estimation of blood cholesterol as a routine measure, in order that a large number of estimations might be carried out on patients with different types of mental disorder.

The technique which was adopted was Duncan's modification of Myers and Wardell's method, but we found it unnecessary to allow the extraction of the cholesterol to proceed for more than half an hour. Several duplicate estimations were carried out on the same bloods, and in no case did extraction for two hours give a figure more than 3 mg. higher than that obtained by extracting for only half an hour. When beginning this series of estimations it was decided to compare the figures for whole blood, serum and plasma. Estimation of the whole blood content was soon abandoned owing to the difficulty of matching the colours in the colorimeter when whole blood was used. Except in a very few cases, the figures obtained for serum and plasma have been strikingly different, the difference varying from 30 to 50 mg., that for serum being the higher. This point is under investigation. It has also been found that the serum content is more stable than that of the plasma; for example, specimens taken on successive days show a wide variation in the cholesterol content of the plasma, but not of the serum.

Up to the end of the year the blood from 72 patients had been examined. Whenever possible, estimations of both serum and plasma were carried out, both estimations being performed on the same day, and with the same standard. In several patients two or more estimations were done at different phases of their illness. In all, 153 estimations were made during 1933. The investigation was directed along three lines: to ascertain the variation in the cholesterol content of serum and plasma in the alternating stages of the manic-depressive psychosis; to study the variations in epilepsy in between the fits and immediately following them; and to examine the blood cholesterol in alcoholism, of which we have had a few cases. In connection with the last line of research experimental work is being undertaken on rabbits.



So far, the blood of 26 patients in the depressed phase and of 14 patients in the manic phase of cyclothymia has been examined, but we wish to augment this number before publishing our results.

The estimations in cases of epilepsy have been few in number (9), and the figures obtained show no uniformity whatever. More cases are being studied.

In alcoholism low figures have been the rule. In one case the cholesterol content fell to 64 mg. in both plasma and serum. The problem of deciding on what constitute normal variations was no easy one, since every authority referred to quoted different "normals." Finally, figures under 110 mg. per cent. for serum have been taken to be abnormal, whilst the upper limit of normality has been taken as 200 mg. per cent.

American and French workers have drawn attention to this low cholesterol content of the blood in alcoholism and as stated above, an experimental investigation has been begun on this subject in our laboratory.

G.—*The Intestinal Flora in Physical and Mental Disease.*—By Dr. RUBY O. STERN.

In the last Report, reference was made to an investigation which had been begun on a comparison between the anaerobic intestinal flora in physical and mental disease. This investigation has now been completed, and the results are here presented.

As stated in the last report, 50 specimens of faeces from cases of somatic disorders were obtained from the Pathological Institute of Charing Cross Hospital Medical School by kind permission of the biochemist, Dr. J. Patterson; another 50 were obtained from the laboratory of the Northampton General Hospital through the courtesy of Dr. Eric Shaw, Honorary Physician and Pathologist to that hospital. For purposes of comparison, the anaerobic cultures of the last 50 faecal specimens examined from patients at Wantage House were scrutinized and analysed. Fifty mental cases only were taken as it was desirable to include only specimens from cases admitted since the beginning of 1933.

As regards technique, thanks to the assistance of Mr. C. Webb, the identical technique hitherto employed in the laboratory for anaerobic culture was used for all the "somatic" cultures.

There are two points to which attention must be drawn before considering the results of this investigation. Specimens obtained from patients resident at Wantage House were selected; i.e., these were only cultured if deemed sufficiently fluid to warrant culture. Otherwise, another specimen of more suitable consistency was obtained. There was no opportunity of repeating or of obtaining "suitable" specimens from the outside sources; we were obliged to culture the specimens as they arrived, whether "suitable" or not. Of the 50 from Charing Cross Hospital, a number survived 24 hours in the post in a semi-solid condition, but the latter 50 specimens were with few exceptions of such a solid consistency, that they would automatically have been rejected as unsuitable had they arrived from our own wards. The other point concerns the time factor. Specimens from patients at Wantage House were collected in the morning and immediately brought to the laboratory, where they were dealt with within an hour. Specimens received by post were of necessity at least twenty-four hours old, whilst those obtained locally were seldom cultured within six hours of collection. It will therefore be apparent, that whilst the specimens from cases of mental disorder were cultured under the best possible conditions for anaerobic growth, the specimens from cases of physical disorder were subjected to conditions which might well militate against any anaerobic growth. These conditions were so unfavourable in fact, that the cultures obtained may be said to represent the average minimum anaerobic content of the stools from cases of physical disorder.

In estimating the comparative number of diphtheroid and leptothrix



organisms present in an anaerobic culture, the system of “pluses” was employed, the total anaerobic culture corresponding to 8 “pluses.” An attempt has been made to tabulate the results as “total cases showing diphtheroids” (or in a separate table, leptothrices); “severe to very severe infection” (4 “pluses” or over 4); “moderately severe to severe” (2 “pluses” or over); “mild” (“plus minus” to 2 “plus”); and none.

TABLE 1.  
Anaerobic Diphtheroid Content of Faeces.

	None.	Mild.	Moderate to Moderately Severe.	Severe to very Severe.	Total showing Diphtheroid.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
W.H. Mental Cases (50)	54	—	18	28	46
Physical Disease (1st 50) ... ..	46	18	36	—	54
Physical Disease (2nd 50) ... ..	72	14	12	2	28
Average percentage— Cases of Physical Disease ... ..	59	16	24	1	41

From the above table it is obvious that there is little discrepancy between the average anaerobic diphtheroid content of the faeces in mental and non-mental cases in as far as the presence or absence of these organisms is in question; actually in the first fifty cases of physical disorder the percentage was higher than in the mental cases, 54 per cent. as against 46 per cent., though in the next fifty it was much lower, 28 per cent. The importance of having a large number of cases for comparison is thus exemplified. As regards the relative diphtheroid content there is a distinct difference between the mental and the non-mental cases: 28 per cent. of the mental cases having a “severe or very severe infection,” as against only 1 per cent. of the non-mental cases. But non-mental cases have a greater “moderate to moderately severe infection” than the mental cases (an average on the two series of 24 per cent. to the 18 per cent. of mental cases). It would seem that given equally favourable conditions of growth the anaerobic diphtheroid content of the stools in cases of physical disorder would approximate *in severity* as closely to that found in mental disorder as apparently from this series it does in frequency.

The presence of leptothrices in the stools of patients suffering from physical disorders was also investigated in the same way, and here there was a striking difference in the mental and non-mental cases. The same method of tabulation was used as for the anaerobic diphtheroids:

TABLE 2.  
Leptothrix Content of Faeces.

	None.	Mild.	Moderate to Moderately Severe.	Severe to very Severe.	Total showing Leptothrix.
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
W.H. Mental Cases (50)	66	18	14	2	34
Physical Disease (1st 50) ... ..	90	6	2	2	10
Physical Disease (2nd 50) ... ..	94	4	2	—	6
Average percentage— Cases of Physical Disease ... ..	92	5	2	1	8



In the mental cases the leptothrices were more commonly associated with the presence of diphtheroid organisms than in the non-mental cases; 20 per cent. of the 34 per cent. in the mental series having a concomitant diphtheroid infection. In the non-mental cases, a leptothrix occurred more often without diphtheroids (6 per cent. out of 10 per cent. in the first 50 cases; 4 per cent. out of 6 per cent. in the second series).

The leptothrices encountered in the stools would seem to be very vulnerable to conditions unfavourable to strict anaerobiosis. It would be of interest to investigate the leptothrix content of the stools in cases of physical disease under optimum conditions for growth.

Experimental work bearing on the toxicity or non-toxicity of anaerobic diphtheroids recovered from the stools of mental patients has been begun during the past year and is being continued.

#### H.—Dental Department.

1. Report by Mr. GAINSFORD REED, L.D.S., visiting Dental Surgeon to the Main Hospital.

During the year 1933, 56 visits were made to the hospital.

One hundred and forty-eight patients (83 male and 65 female) attended for dental examination and treatment, and the total number of attendances made by them was 902.

Reports in 101 cases were sent in.

Fifty-two patients (27 male and 25 female) who had not attended previously or for some years, came up for treatment, which is a slight increase on last year. In 24 of these cases (17 male and 7 female) dental sepsis of a long-standing nature was found, either by clinical or radiographic examination.

Ninety-six patients came up for treatment again, and in nearly every case it was possible to put their mouths into a healthy condition—in the majority of cases by radical treatment—and to render mastication efficient by denture work.

All dental treatment has been carried out in close co-operation with the medical staff, and the question of the relation of septic foci of infection in regard to mental disease has been constantly borne in mind.

A new general anaesthetic in the form of Evipan sodium has been used where a large number of teeth have had to be removed, and the patient would not be co-operative with a local anaesthetic, or where the latter method was contra-indicated by the presence of open sepsis. Where one would not ordinarily use ether or some other form of general anaesthetic, this intravenous anaesthetic has been found very successful in mental cases, and, in all cases where it has been used up to the present, no difficulty has been experienced or any untoward reaction seen.

The advantages of this intravenous anaesthetic are :—

- (1) The rapidity of its action.
- (2) The free access it gives to the mouth.
- (3) The ample time it gives for the completion of the extractions.
- (4) The considerable reduction in the amount of haemorrhage from the teeth sockets.
- (5) The provision of an excellent anaesthetic in those gas-tolerant alcoholic cases which are frequently met with in mental institutions.

CO<sub>2</sub> therapy in the form of a dental hygienator which administers, in an atomised condition, a warm solution, supercharged with carbon-dioxide, at a suitable pressure to reach the gingival trough, is now being used as a routine practice. It is easy to use, and has general cleansing action on the mouths of those patients who are unable to look after themselves, and is found beneficial for gum treatment.

In those cases where a general anaesthetic has been contra-indicated for the extraction of teeth, and it has been found necessary to make multiple extractions with a local anaesthetic (it has been specially noticeable, in



those mouths where there is chronic sepsis, with marked gingivitis) it has been possible to extract as many as three teeth each week, without any reaction or set-back in the patient's physical condition.

Thirteen cases were referred to the radiographic department, and in each one the X-ray examination revealed, to a more or less extent, apical foci of infection, and extractions were done in eight of these cases.

It has been found possible to fit dentures in 60 per cent. of the cases where extractions have been done.

In all cases where extractions, either multiple or otherwise, have been done by the different methods, the sockets have healed with no ill-effects in the mouth as regards the persistence of sepsis, and the mouth has become healthy in the normal way, in spite of the septic condition which had prevailed in many cases.

The following is a summary of the work completed throughout the year :—

No. of general anaesthetic cases for teeth extractions, 12 ; No. of patients who received  $N_2O$  and local anaesthetics for teeth extractions, 42 ; extractions, 224 ; fillings, 105 ; attendances by patients for scaling, gum treatment, cauterizing and syringing, 238 ; dressings, 16 ; new dentures inserted, 26 ; dentures repaired or remodelled, 82.

## 2. Report by Mr. M. F. G. HUSBANDS, L.D.S., Visiting Dental Surgeon at Wantage House.

Twenty-six new cases have come under observation during the year. Radiographs are taken of all cases where natural teeth were still in situ.

The treatment advised was not sanctioned in four cases, and only partially done in eight others.

All patients are re-examined regularly as long as they remain in the Hospital, and repeat radiographs are taken whenever considered desirable. Further treatment is recommended and carried out as required.

Necessary treatment is awaiting completion in eight cases owing to the condition of the patient or lack of co-operation.

Local anaesthesia is used for practically all work, including fillings, only three general anaesthetics having been given during the year.

The following gives details of the treatment carried out during the year :—

Visits, 43 ; examinations, 26 ; examination radiographs (including repeats), 59 ; extractions, 56 ; general anaesthetics, 3 ; fillings, 141 ; scalings, 43 ; dressings, 32 ; new dentures, 7 ; remakes, 6 ; repairs, 4.

## LXIV.—FROM THE WONFORD HOUSE HOSPITAL, EXETER.

*General Report.*—By Dr. H. W. EDDISON, D.P.M., Medical Superintendent

### A.—*Pathological and Biochemical.*

The following is a summary of the examinations made during the year:—

Urine : routine, 688 ; special : urea concentration tests, 17 ; sugar estimations, 10 ; albumen estimations, 6. Blood : sugar estimations, 4 ; glucose tolerance curves, 3 ; urea estimations, 16 ; Sachs-Georgi serum reactions, 20 ; serum agglutination tests, 20. C.s.f. : complete examinations including cell count, protein content, colloidal gold curve, Wassermann test, 2. Bacteriological, including examination of urine and faeces, 6.

### B.—*A Case of Confusional Psychosis with an Idiosyncrasy to Sulphonal.*

Patient, G.K.K., female, age 36. Married. Admitted November 23rd, 1933.

*Previous History.*—Her history revealed prolonged stress due to unhappy family conditions. She was found wandering immediately prior to her admission.



*History since admission.*—On admission she was in a state of stupor, the body in rigid extension except for the upper limbs which were tightly flexed across the chest. She was mute, inaccessible and practically oblivious of her surroundings. Phases of acute excitement occurred in which she was noisy and resistive. She was tube-fed on the day following her admission and sulphonal 20 grains were given at the same time. She was given another 20 grains of sulphonal on the following day. An examination of the bodily systems did not reveal any organic disease.

Two days later she developed a scarlatiniform rash at first punctiform, but becoming diffuse, on the trunk and limbs. There was slight pyrexia, but no marked constitutional disturbance except for congestion of the throat. The rash faded in about 5 days, and there was some desquamation of the skin. Dick's test for scarlatina gave a negative response.

Her mental condition improved and on December 4th the confusion had disappeared. She conversed lucidly and was accurately orientated. She had, however, a complete amnesia for the acute phase of her mental illness.

On December 14th there was a recurrence of the signs of confusion with resistiveness and refusal of food. She was tube-fed and 20 grains of sulphonal were administered. Two days later a scarlet rash similar in character and distribution to the previous one appeared and faded away in the course of five days. There was no pyrexia or signs of constitutional disturbance.

Three weeks later the confusion disappeared and she was able to discuss her condition and to amuse herself with normal interests.

#### LXV.—FROM BRENTRY COLONY, WESTBURY-ON-TRYM, BRISTOL.

*Disinfecting without Handling.*—By Dr. G. DE M. RUDOLF, M.R.C.P., D.P.H., D.P.M., Medical Superintendent.

By means of a canvas bag kept in the ward, a tank with wire cage, and a pulley suspended from an overhead rail, infected articles can be sterilized without being touched from the time they leave the bed until they are removed from the disinfectant.

The articles are placed in a canvas bag which is carried to the tank containing the wire cage. The tank and cage are conveyed to the disinfectant house where the cage is lifted out of the tank by a hook and tackle running on an overhead rail. It is lowered into a tank of cold liquid, to prevent the protein from staining the material, and later again raised by the hook. The cage is run along the overhead rail, lowered and pushed into the disinfectant. The articles are not removed from the bag until the sterilized bags are removed from the disinfectant in the "clean" room.

Details of the above were published in the *Journal of the Royal Army Medical Corps*, August, 1933, page 131, where photographs of the arrangement may be found.

*The Mental Deficiency Institution in the Prevention of Crime.*—By Dr. G. DE M. RUDOLF, M.R.C.P., D.P.H., D.P.M.

Crime is prevented by the detention perhaps for life of potential criminals in mental deficiency institutions.

The question as to whether the training received in a Colony prevents further crime was investigated by reviewing all criminal cases who had been discharged or sent out on licence from Bentry Colony. Of 30 such defectives, 28 (93·3 per cent.) committed no further crime for periods varying from 1 2/12 years to 9 8/12 years after leaving the Colony. Of 13 who were unemployed for periods varying from some months to three years, 12 (92·3 per cent.) committed no crime.

Of the defectives who had committed theft or sexual offences, the mean periods of observation after leaving the Colony were 4 7/12 and



4 1/12 years respectively. The mean durations of stay in the Colony were 4 5/12 and 2 9/12 years, whilst the mean maximum wages were 47s. 4d. and 26s. 11d. per week. Although the 11 defectives who had committed sexual offences spent a shorter time in the Colony, none of them committed further offences, but of the 16 thieves, 2 committed further theft.

Eight defectives had committed multiple crimes before being dealt with under the Mental Deficiency Acts.

(*Journal of Mental Science*, lxxix, 554, July, 1933.)

#### LXVI.—FROM THE CALDERSTONES CERTIFIED INSTITUTION, WHALLEY.

*Laboratory Report.*—Communicated by the Medical Superintendent.

The following is a summary of the 6,632 examinations, etc., conducted in the laboratory during the year:—

Bacteriological: faeces, cultural for *B. dysenteriae* and other pathogens, 1,603, for tubercle bacilli, 141; sputa for tubercle bacilli and other organisms, 29; throat swabs for K.L.B., 10; urines, 6; vaginal swabs, 5; blood culture, 1; milks, 4; vaccines, 7; miscellaneous, 16. Serological: sigma reactions, 477; agglutination reactions, 2,672. Bio-chemical: urines, routine, 599; sugar estimation and test for ketones, 452; miscellaneous estimations, 121; milks, water, total solids, fat, 27; blood, miscellaneous estimations, 13. Microscopical: urines, 379; R.B.C. counts, 12; W.B.C. counts, 11; haemoglobin and colour index, 12; differential leucocyte counts, 10; abnormal blood cells, 13; miscellaneous, 4. Post-mortems, 8.

#### LXVII.—FROM THE CATERHAM (LONDON CO.) MENTAL HOSPITAL.

*General Report.*—By Dr. T. LINDSAY, F.R.C.S. (Edin.), D.P.M., Medical Superintendent.

The work of the hospital has continued in a satisfactory manner throughout the year. A new occupation centre for low grade females has been started in a detached block. The supervision of occupation therapy on the female side has been reorganized as described.

The hostel continues to make progress. The local inhabitants are becoming accustomed to the idea of a hostel and are more and more giving employment to the inmates. This, I think, is to be attributed to the general excellent behaviour of the boys.

In the previous report it was pointed out that a large mass of evidence in various directions was being collected and the result of the sifting of some of this evidence will be found in the present report.

I can again express myself as satisfied with the work which has been accomplished.

Summary of tests performed in the laboratory during the year:—

Urine: routine and bacteriological examination, 750. Faeces: examination of, for *B. dysentery* and typhoid groups of organisms, 164; examination of, for T.B. organisms, 23. Throat swabs: for *B. diphtheria*, etc., 44. Sputum: for *B. tuberculosis*, etc., 25. Blood: cell counts, red and white, differential counts, estimation of haemoglobin, etc., 20; estimation of blood sugar, 4; glucose tolerance tests, 6. Dreyer's tests: standard flocculation tests *B. typhoid* and *B. dysentery* groups of organisms, 80. Histological sections: histological examination of tissue, frozen method, 4; paraffin, 116. Miscellaneous: examination of pus, fluids, etc., 19. Specimens forwarded to Central Laboratory for Wassermann reaction: blood, 1,378; c.s.f., 1,258. Complete post-mortem examinations: male side, 22; female side, 14.

*Scarlet Fever.*—There was only one case of scarlet fever during 1933. This occurred in F.C.1 ward (a boys' ward). The ward was quarantined for 14 days and 57 contacts were inoculated with 2.5 c.c. of streptococcal anti-toxin (scarlatinal) of the Belmont Laboratories. No further cases occurred.



*Dysentery.*—Only two fresh cases have occurred during the year. Nine cases were recorded in 1932, and 46 in 1931, a marked reduction in incidence during the period of three years. Both cases occurred in the early spring on the female side, one in B. block, and the other in F.C.1. In both cases the bacillus Flexner was isolated. The wards concerned were isolated and all contacts inoculated with a stock vaccine prepared at the Central Pathological Laboratory of the L.C.C. from previous cases occurring on the female side of the hospital during 1931. The dose given was 250 million organisms in  $\frac{1}{2}$  c.c. solution, subcutaneously, followed by 500 million organisms in 1 c.c. after a lapse of seven days. In addition, all contacts had their stools examined for possible infection.

I would like to emphasize the importance of vigilance on the part of medical and nursing staff, and the early laboratory examination of all stools from cases of diarrhoea or suspected dysentery, if the incidence of this disease is to be effectively checked.

The following table shows the incidence of dysentery at Caterham since 1928, and the gratifying results which followed the prophylactic inoculation of all contacts since 1931, when the disease was at its height :—

1928	...	...	...	...	27 cases.
1929	...	...	...	...	15 „
1930	...	...	...	...	7 „
1931	...	...	...	...	46 „
1932	...	...	...	...	9 „
1933	...	...	...	...	2 „

*Diphtheria.*—One female nurse developed the disease in September, 1933. The source of the infection was probably from outside, but all contacts in the ward where she had been working were inoculated with diphtheria anti-toxin (750 units each). No other cases occurred.

*Chickenpox.*—There was a small epidemic in September and October, on the whole of a mild type. Nine cases occurred amongst children in F.C.1 and F.D.3. In addition, two nurses contracted the disease in F.D.3. The association of herpes with chickenpox was noted, one boy developing herpes of the pinna.

*German Measles.*—Seven cases occurred during March, 1933, one of whom developed broncho-pneumonia and died.

*Mumps.*—There were four cases on the female side, one in F.F.2, and the others in F.E.1, during October and November, 1933. All the cases were mild.

*Typhoid and Paratyphoid Fever.*—No cases were recorded in 1933, but regular examinations of the stools of five suspected cases have been carried out with negative results.

#### *Occupation Therapy in the Wards (Female Side).*

Under the immediate care of the Junior Occupation Supervisor, Miss Baker, classes are held in every ward except B. block, which contains mostly ward and other workers. The times have been so arranged that each ward is regularly visited once a week by Miss Baker, who spends from one to two hours teaching the patients, promoting interest generally, and setting the work for the week, which is then carried on under the supervision of the Chief Charge Nurse of the ward. The patients taught are of all grades, there being 8 feeble-minded, 19 high-grade imbeciles, 35 medium-grade imbeciles, and 155 low-grade imbeciles, making 217 in all. The older patients are mostly of the quiet, demented type, and there are many cripples amongst the lower grade of imbecile boy or girl. Knitting has been found to be most suitable for the older type of patient. The younger ones are taught bead and tablet threading, sewing and braid-weaving frames, lacing, tying and buttoning frames, and making stitches on canvas tacked to a wooden frame. A kindergarten band has been started, and is much enjoyed by the lower grades of children, who appear to delight in rhythmic movements.



*Detached Ward.*—This ward, which was filled with a more tractable type of girl defective in 1932, may now be classed as a miniature Female Training Centre. The patients attending now number 42, 35 of whom live in the ward, and 7 come daily from the main building. This class, under the care of Miss Smith, has accomplished much useful work during 1933. Besides the education in handicraft which the patients have received, there is a marked improvement in the behaviour of the girls, who appear happy and contented both at work and during play. Amongst the more unstable elements, there is no doubt that this type of work has a stabilizing influence. The handicraft work taught is varied, and each girl is given the opportunity of learning as much as possible. Hand-loom weaving has been introduced, and is much liked by the higher-grade of defective. Other work taught includes whitewood painting, embroidering on linen, basket-making, rug-making, stool seating and canvas work. Wherever possible, the girls are allowed and encouraged to complete the articles entirely by themselves. By this means they appear to develop a greater sense of pride and responsibility in their finished product. Most of the articles made in this class are sold, the centre showing a profit of £2 17s. 7d. on this year's working. There were 179 articles made, and 153 sold.

	£	s.	d.
Material used for instructional purposes (mostly in other wards) ... ..	5	3	7
Material and finished articles in stock ... ..	10	18	5
Articles sold ... ..	23	3	6
	<hr/>		
	39	5	5
Cost of material supplied ... ..	36	7	10
	<hr/>		
Profit for year 1933 ... ..	£2	17	7

In the estimation of this profit, no account has been taken of any depreciation in the value of the stock and apparatus in hand.

A room has recently been set aside for the use of a limited number of high grade, well-behaved defective girls, as a reading and writing room during leisure hours in the evening. This privilege is much appreciated.

*Investigation into the incidence of positive Wassermann Reactions and M.K.R. of the blood serum of parents of congenital syphilitic defectives, with a view of the possible treatment of mothers of child-bearing age.*—  
By Dr. K. C. L. PADDLE, M.C., D.P.M.

So far we have succeeded in interviewing 27 mothers and 5 fathers, parents of congenital syphilitic children in the institution. Of these 27 mothers, 13 were willing to have their blood examined, and of these 13, 6 were returned as strongly positive, both to the W.R. and the M.K.R., the other 7 were negative. All 5 fathers were returned negative. Of the 6 positive mothers, only 2 were of child-bearing age, one being 29, the other 32 years old. The nature of the complaint they were suffering from was explained to them as tactfully as possible, and free treatment offered. The younger woman accepted our offer, and she is now undergoing a course of anti-syphilitic treatment, receiving weekly intravenous injections of N.A.B. The other mother, fully realizing her present condition, has promised to attend Great Ormond Street Hospital, where one of her children is at present receiving attention, it being more convenient for her to go there weekly than to attend our treatment centre.

It is hoped that in the future, a larger number of young mothers of these unfortunate children, will submit themselves for investigation and treatment, as it is our firm belief that little is to be gained by the treatment of the syphilitic child, but much may be expected by treating the parents well before the birth of the child.



*Psychological Department.*—By Dr. C. J. C. EARL, F.R.C.P.I., D.P.M.

*Psychometrics.*—There has been a considerable decrease in the number of mental tests performed during the year 1933. This is principally due to the fact that the psychometric survey of the population of the institution, which was commenced in 1931, has now been completed. Attention is now being concentrated upon other test methods and the experiments on the composition of a suitable performance battery for the adult defective are being continued.

Mental Tests applied during 1933.

1.	<i>Verbal Tests</i> —					
	(a) Stanford Revision of the Binet Simon Scale	...				61
	(b) Kent Emergency Oral Test	...	...	...	...	21
2.	<i>Performance Tests</i> —					
	Experimental Battery	...	...	...	...	3
	Experimental Battery A	...	...	...	...	48
	Gun's Scale (modified)	...	...	...	...	7
	Kent Koh Block Design (only)	...	...	...	...	11
	Kent Shakow Form Boards	...	...	...	...	4
	Drawing Tests (only)	...	...	...	...	26
	Merrill Palmer Series	...	...	...	...	17
3.	<i>Various</i> —					
	Cattell's Dartington Scale "O"	...	...	...	...	22
	Tests for "g" factor	...	...	...	...	9
	Psycho-physical tests	...	...	...	...	5

In addition Binet's Group Test No. 34 has been applied to 90 nurses, with a view to determining the most suitable method of training. The results appear to indicate that the present methods of instruction and of examination of nurses are unsuitable for the educational standard of the candidates.

*Rating Methods.*—A linear rating scale for recording the behaviour of the high-grade boys at Chaldon Mead Hostel was devised and applied experimentally to 30 boys. The results were not unpromising, but the method has now been abandoned in favour of a score card method.

*Research Work.*—By Dr. K. C. L. PADDLE, M.C., D.P.M., and Dr. D. MAGRATH, D.P.H.

*Dysentery.*—The duration of the agglutinating properties of the sera of vaccinated cases was determined from three selected cases during a period of three months. The vaccine used was a pure culture of bacillus Flexner "W," and the doses used were the usual ones in this hospital, i.e., 250 millions, followed by 500 millions in one week's time. Care was exercised in finding suitable patients whose sera did not agglutinate Flexner "W" organism at all. Four patients in all were found in one ward, which had been free from dysentery for many years and three of them were inoculated with the above vaccine. The fourth case was used as a control. The agglutinating properties to bacillus Flexner "W" of the sera of all four cases was then determined weekly over a period of three months, and plotted out on a chart in reduced titre units, with the following results:—

The control remained negative right through the experiment.

*No. 1 Case.*—Rose to a maximum of 32 R.T. units in two weeks, and was negative at the end of nine weeks.

*No. 2 Case.*—Rose to a maximum of 80 R.T. units at the end of the first week. At the end of five weeks it dropped to 32 R.T. units. At the end of fifteen weeks his sera still agglutinated to 22 R.T. units.

*No. 3 Case.*—Rose to a maximum of 110 R.T. units at the end of the second week, then fell rapidly to 33 R.T. units at the end of the third week, followed by a slow descent to 11 R.T. units at the end of the eighth week, at which point he remained, even after the fifteenth week.

The conclusions arrived at in this limited series point to wide individual variations in the agglutinating properties of sera following inoculation, and presumably wide individual variations in immunity also.



*Research Work.*—By Dr. C. J. C. EARL, F.R.C.P.I., D.P.M.

An investigation with certain psychomotor and emotional abnormalities of idiocy has been completed and a psychosis—"The Primitive Catatonic Psychosis of Idiocy"—has been defined and described by Dr. C. J. C. Earl. The results have been communicated in a paper read to the Medical Section of the British Psychological Society on November 22nd, 1933. This paper is now awaiting publication.

The experiments with mental tests mentioned above are being continued and an investigation with certain personality factors in high grade defectives has been commenced.

#### *Publications.*

1. "Hydrocephalus and Endocarditis in a Congenital Syphilitic Mental Defective." By Dr. K. C. L. PADDLE, M.C., D.P.M.

The course of congenital syphilis in a male imbecile with hydrocephalus was carefully studied and described. He was admitted to Caterham at the age of 7 and died when 17 years of age. Recent warty growths were found on the mitral valve. The brain showed great thickening of the pia mater with adhesions in the upper part of the left psycho-motor area. All organs were examined histologically by ordinary methods as well as by Jahnke's silver method for spirochaetes, but none were found. The family history of this case clearly showed the sad consequences of untreated syphilis in the parents where no healthy issue resulted from any of the first six pregnancies. After adequate treatment the mother gave birth to a healthy child for the first time. After reviewing the work of other authors on this subject, it was concluded that there was little to be gained in the treatment of the syphilitic child, and the only hope lay in treating the parents. (*British Journal of Venereal Diseases*, October, 1933.)

2. "Congenital Syphilis in Low-Grade Mentally Defective Children." By Dr. K. C. L. PADDLE, M.C., D.P.M.

Mentally defective children at Caterham Mental Hospital, 402 in number, mostly low grade, had both their blood and cerebro-spinal fluid examined. The Wassermann Reaction and Meinicke macro-clarification reaction were done on the blood-serum, the Wassermann reaction, Lange's colloidal gold test, Pandy, and cell estimations on the cerebro-spinal fluid. Forty-six cases gave various reactions in the blood or cerebro-spinal fluid, and 356 were serologically negative. Of the 46, 35 were considered to be congenital syphilitics. Two of the 356 cases were, on clinical grounds, also considered congenitally syphilitic, giving a total of 37 cases of hereditary syphilis, or an incidence of 9.2 per cent.

The Wassermann reaction in the blood of these children was, in the majority of cases, much more sensitive than the Meinicke macro-clarification reaction; the reverse appears to be the case in adults.

In the group of congenital syphilitics 12 had abnormal cerebro-spinal fluids—approximately one-third of the cases.

The cerebro-spinal fluid of 5 gave strong parietic types of curve, associated with positive Wassermann reactions, increase of cells and protein, but none of these cases, however, could on clinical grounds be regarded as juvenile general paralysis.

The cerebro-spinal fluid of 29 mongols failed to give any type of curve with the colloidal gold reaction.

In 60 per cent. of the congenitally syphilitic boy defectives there was a marked retardation in the descent of the testes. This contrasts with 39 per cent. in a comparable group of non-syphilitics. (*British Journal of Children's Diseases*, October to December, 1933. Vol. 30, pages 249 to 261.)



3. "The Human Figure Drawings of Adult Defectives." By Dr. C. J. C. EARL, F.R.C.P.I., D.P.M.

The drawings of 420 cases were studied. The Goodenough Scale correlates  $+ .48 \pm .07$  with the Stanford Binet.

Compared with normal children of similar intelligence, defectives excel in representation of detail but are deficient in proportion, and in spatial orientation. Their drawings are of static type and tend towards femininity. A special ability for drawing is uncommon in defectives and the artistic ability does not occur. The drawings of unstable and psychotic defectives show certain distinctive features.

The test is a useful component of a performance battery for three subjects. (*Journal of Mental Science*, April, 1933.)

4. "Human Figure Drawings of Feeble-Minded Adults." By Dr. C. J. C. EARL, F.R.C.P.I., D.P.M.

A paper very similar to the above. Read before the Joint Session of the American Association on Mental Deficiency, and the American Psychiatric Association, Boston, May 31st, 1933.

Published in the *Proceedings of the American Association on Mental Deficiency*, 1933.

#### LXVIII.—FROM THE FOUNTAIN (LONDON CO.) MENTAL HOSPITAL.

*General Report.*—By Dr. JAMES NICOLL, Medical Superintendent.

##### A.—*Analysis of routine pathological investigations.*

The following is an analysis of routine laboratory work during the year :—

Urine, 743 ; sputa, 8 ; pus, 11 ; hair and skin, 30 ; throat swabs, 87 ; nasal swabs, 64 ; blood counts, 20 ; faeces, 6 ; swabs from gums, 232 ; c.s.f. (protein test), 16 ; pathological slides, 160 ; total number slides examined in all, 2,310 ; bloods collected, 365 ; c.s.f. collected, 21 ; post-mortems, 10 (59 per cent of deaths in hospital) ; photographs, numerous.

##### B.—*Artificial Sunlight Treatment.*

During the first three months of 1933, 17 patients had regular sunlight baths twice weekly ; 15 for general debility and malnutrition, 1 for dermatitis and 1 for a tuberculous ankle.

##### C.—*Publication.*

"Congenital Aortic Bicuspid Valves Associated with Fenestration and Gross Mental Deficiency." By Dr. L. C. COOK, D.P.M., and Dr. C. GUY MILLMAN. *The Lancet*, 1933, 1, 1018.

##### D.—*Investigations into Syphilis in young mental defectives.*—By Dr. L. C. COOK, D.P.M., and Dr. F. H. HUNNARD.

During 1932 these investigations were held up owing to the unreliability of the Wassermann reaction in children by the ordinary technique, very successfully employed in the case of adults. These difficulties have now been overcome and the accuracy of the Wassermann reaction in the children in the Fountain Hospital compares favourably with that given by adult subjects. At the end of 1933 blood sera Wassermann and Macro-Meinicke clarification reactions had been performed on all patients in the hospital. Out of 545 cases, 15 gave double positive reactions, which constitutes 2.75 per cent. This figure is lower than many previously published results taken from ament populations, but as the percentages given by various workers vary from 2 to 42, it is probable that the technique was not sufficiently controlled in many of the higher figures. It is perhaps significant that nearly all the recent figures from America are below 6 per



cent. In addition to the 15 cases showing double positive reactions, 8 cases were positive to the Meinicke reaction whilst remaining negative to the Wassermann reaction. Several other cases showed clinical evidence of congenital syphilis but the serological findings were persistently negative. If these cases were to be taken into consideration the number of congenital syphilitics in the hospital would be raised to approximately 5 per cent. All the tests were performed at the Central Pathological Laboratory of the London County Council Mental Hospital Service, under the direction of Dr. Golla.

The cerebro-spinal fluid was examined in the 15 cases whose blood sera showed a positive Wassermann reaction and also in 6 other cases. The positive findings are tabulated below :—

Serial No.	Sex and Age.	Serum W.R.	C.S.F. W.R.	Cells.	Protein.	Lange.	Remarks.
1626	F. 18	+30+	+30+	++	++	5555544321	—
2564	F. 25	+30+	+15	+	++	5555543210	Hemiplegic
3439	M. 10	+30+	+30+	+++	++	5555443210	—
3724	F. 16	+30+	+30+	++	++	5555554321	Diplegic
3679	F. 13	+30+	+30+	++	++	5555554321	Diplegic
3925	M. 9	+30+	+15	+	+	4433210000	—
2021	F. 17	+30+	Neg.	R.B.C.'s+ Xantho- chromia	+++	1234321100	Naevoid Amentia

None of the 5 cases, who showed a strongly positive W.R., excess of cells and protein and a typically paretic type of Lange gold curve, could be considered to be congenital general paretics on clinical grounds. For instance, number 1,626, apart from her lack of physical signs, was admitted at the age of 4, since when she has shown steady improvement, and is now a useful laundry worker. Number 2,564 suffers from an old hemiplegia, and has remained active and stable for 11 years, and number 3,439, who was admitted at the age of 5, has shown considerable mental and physical improvement during the 5 years he has been here; he shows no neurological signs of disease.

*Examination of the Blood of Parents of certain patients.*—Where possible, the mothers of the patients whose serological reactions were positive were interviewed and requested to consent to having their own blood tested. In 6 cases this was done, with 4 negative, and 2 strongly positive results. The mothers whose blood showed a positive Wassermann reaction were referred to special V.D. Centres for treatment. This investigation is being continued.

*Treatment of Patients with Positive Wassermanns.*—The 15 patients in the hospital whose Wassermann reactions were positive are being treated by injections of Arsenical Preparations, supplemented by the administration of Mercury or Potassium Iodide by the mouth. In the case of adults, Stabilarisan (arsphenamine diglucoside) is being given intravenously and mercury and potassium iodide is being given by the mouth, the general scheme of treatment being based upon that recommended by Col. L. W. Harrison.

In the case of children, intramuscular injections of Sulphostab (Boots) are being given, supplemented by mercury by the mouth. The scheme of treatment consists of weekly injections for two months alternating with one month's rest, during which latter period the mercury is given.

*E.—Diphtheria Prophylaxis.*—By Dr. L. C. Cook, D.P.M.

In the early months of the year it was decided to make an attempt to immunize the whole hospital against diphtheria. This decision was made because the efficacy of active immunization against diphtheria has



now been definitely established over a number of years and because the dangers of the inoculations have become almost negligible.

In the first place, every patient was Schick tested, all doubtful cases being re-Schicked later.

TABLE I.  
Summary of results (611 cases).

	Males.			Females.		
	Schick +	Schick —	Total.	Schick +	Schick —	Total.
In hospital ...	103	107	210	134	223	357
Died, discharged or transferred ...	10	9	19	8	17	25
Totals ...	113 (49%)	116 (51%)	229	142 (37%)	240 (63%)	382

In this series all the males were under 17 years of age. There were 71 females over 17 of whom 7 were Schick positive, and 64 Schick negative. The large percentage of negatives is difficult to explain. Only 8 had been previously immunized and 3 of these gave a positive reaction, leaving only 4 Schick positives in 63 non-immunized adult patients. These figures differ enormously from those found in normal adults and also from those found in the staff of this hospital.

A considerable number of the patients were immunized in 1929 and 75 of these still remain in the hospital. It was of great interest to see how many were now Schick negative and perhaps surprising to find that as many as 25 gave positive reactions. The antitoxin titre of the blood of 16 of these patients was estimated at the Wellcome Physiological Research Laboratories (Dr. R. A. O'Brien) and in the majority of cases it was sufficiently high to confer immunity against diphtheria. It appears evident that, with the use of 0.2 c.c. of the Schick toxin prepared at the Belmont (London County Council) Laboratories, a Schick negative reaction signifies complete immunity, and that in some cases showing a Schick positive reaction there is sufficient antitoxin in the blood to confer a complete or partial immunity. There is also some evidence that, after active immunization the slightest attack of diphtheria, even in patients who remain Schick positive, will stimulate the immediate production of sufficient antitoxin to render the attack abortive. In several cases showing weak Schick positive reactions at first, definite negative reactions were found on repetition. This is said to be due to the stimulus to antitoxin formation provided by an extremely minute and local attack of diphtheria, i.e., the Schick test toxin.

TABLE II.

	Males.			Females.		
	Schick +	Schick —	Total.	Schick +	Schick —	Total.
Totals ...	113 (49%)	116 (51%)	229	142 (37%)	240 (63%)	382
Immunized in 1929 :						
Over 17 ...	—	—	—	3	5	8
Under 17 ...	9	15	24	13	30	43
Not immunized in 1929 :						
Over 17 ...	—	—	—	4	59	63
Under 17 ...	104 (51%)	101 (49%)	205	122 (45½%)	146 (54½%)	268

It will be seen from the last line of figures in Table 2 that in non-immunized children between the ages of 2-17, the Schick positives and negatives are approximately equal, although there is a slightly greater percentage of Schick negatives amongst the girls. This is probably due to the slightly greater average age of the female patients in this series of cases.

*Immunization.*—Permission from parents was considered advisable before actively immunizing the Schick positive patients. In over 90 per cent. cases permission has been forthcoming and it is expected to raise the figure to over 95 per cent. during 1934. Active immunization has been carried out by means of 3 intramuscular injections of diphtheria prophylactic prepared by Dr. White, director of the Belmont (L.C.C.) Laboratories. The initial dose has been 0.1 c.c., followed in 3 weeks by one of 0.2 c.c., followed in 2 weeks by one of 0.3 c.c. These are only half the usual children's doses, but the presence of so many delicate patients, and the importance, from the point of view of keeping up the high percentage of permissions, of avoiding any severe reactions, influenced the adoption of this modified dosage. Careful record of local and general reactions has been kept both for statistical purposes and so as to prevent any danger of too large a dose being given in subsequent injections. At present 162 immunizations have been completed. 126 patients showed no reaction at all, except for slight local redness in a few cases. In the remaining 36 cases there were 43 mild and 7 moderate local reactions, and 4 mild and 4 moderate general reactions. In no case was there redness and swelling of the whole arm as occurred in some members of the staff. None of the general reactions were severe, and all patients had completely recovered before the end of the 3rd day after immunization.

TABLE III.

## Summary of Reactions.

	Mild local.	Moderate local.	Mild general.	Moderate general.	Total.
1st inoculation ... ..	16	6	2	3	27
2nd inoculation ... ..	19	1	1	—	21
3rd inoculation ... ..	8	—	1	1	10
Totals ... ..	43	7	4	4	58

*Staff.*—The nursing staff was informed of the advantages of immunization and about 75 per cent. availed themselves of the opportunity to be Schick tested. Forty-two were Schick positive and 62 Schick negative. These figures are in approximate agreement with those found in the normal non-immunized adult population and differ markedly from the figures shown by the non-immunized adult patients in this hospital. In addition, 12 other staff (male and female) were Schick tested with 4 positive and 8 negative results. Twenty-nine nurses and 3 of the other staff have so far been actively immunized. The reactions in this series were rather more severe, mainly because full adult doses were given, except when contra-indicated. Fourteen subjects showed no appreciable reactions. Of the remaining 18, four had sufficiently severe reactions to necessitate absence from duty, but in no case did the temperature rise to more than 100° F. or the severe symptoms persist for more than 24 hours.



TABLE IV.  
Summary of Reactions (Staff).

	Mild local.	Mild local and general.	Moderate local.	Moderate local and general.	Severe local, moderate general.	Severe local and general.	Severe general.	Atypical.	Totals.
1st inoculation	3	4	1	2	2	1	1	2	16
2nd inoculation	1	6	2	3	—	—	—	2	14
3rd inoculation	2	1	—	1	—	—	—	—	4
Totals ...	6	11	3	6	2	1	1	4	34

LXIX.—FROM THE LEAVESDEN (LONDON CO.) MENTAL HOSPITAL.

*Report on Research Work.*—By Dr. R. M. STEWART, F.R.C.P., D.P.M., and Dr. W. ROSS ASHBY, M.A., D.P.M.

Work in connection with the *morphology of the brain in mental deficiency* is being continued.

During the year we have completed the examination of the corpus callosum and its relation to mental age. A slight positive correlation between the area of medial cross-section of the corpus callosum and mental age (actually  $+0.247$ ) has been found, but it is known that the whole body tends to be smaller in the defective, and when this general trend is allowed for, the correlation becomes insignificant. Our final conclusions are that, contrary to Spitzka, the area of the corpus callosum shows no specific correlation with mental age.

A technique for the measurement of the mean thickness of the two layers of the cerebellar cortex has also been evolved and tested. The measurements on our series are completed but the results are not yet fully analysed.

We have worked out and tested a technique for the measurement of the layers of the cerebral cortex. The preliminary work on the method is completed and the measurements on our series are now in progress.

Miss Glynn, B.Sc., who is working in this laboratory, is investigating the content of various lipoids in the cerebral cortex of the mental defective. The work is still in progress.

*Routine Laboratory Work.*

The following is a summary of the examinations conducted in the laboratory during the year:—

Biochemistry: urine analysis, 2,683; blood sugars, ureas, etc., 67; occult blood, 2; c.s.f. examinations, 897. Bacteriology: cultures (faeces, urines, bloods, etc.), 815; swabs, various, 35; agglutinations, Widal's, etc., 69; demonstrations of organisms, etc., 360; demonstrations of worms, ova, etc., 156; other specimens, 14. Haematology: blood grouping, counts, differentials, etc., 168. Histology: sections prepared, mounted and examined, 924. Museum: pathological models in wax, spec. mounted, preserved, etc., 22. Photography: photo-micrography, 189, routine photography, 946; cine photography, in feet (completely assembled with titles, etc.), 750. Specimens sent to Central Laboratory, 938. Post-mortem examinations, 46.

*Publications.*

‘Juvenile Types of General Paralysis.’ By Dr. R. M. STEWART.

*Summary.*

1. About 1 per cent. of all cases of congenital syphilis develop paralysis, the sexes suffering equally.
2. The age at onset is usually between the tenth and sixteenth years, and the duration longer than in the adult type.
3. Stigmata of congenital syphilis may be entirely absent.
4. A general arrest of bodily development or infantilism is common.
5. The neurological signs differ from those of the adult type in the greater frequency of focal signs, complete immobility of the pupils, and the presence of optic atrophy in conjunction with other signs of tabes.
6. Two types of the disease may be recognized. In the one, the patient has been defective from birth; in the other, the symptoms appear in a child of normal mental development.
7. Expansive and paranoid delusions are uncommon, the usual clinical picture being one of simple progressive dementia.
8. The laboratory findings resemble closely those seen in the adult type. A spirochaetosis in the cerebro-spinal fluid of the juvenile parietic has been recorded.
9. Prominent among the pathological changes in the nervous system are smallness of the cerebral hemispheres, status spongiosus of the cerebral cortex, atrophy of the cerebellar folia, and binucleated Purkinje cells.
10. Treatment by induced malaria and arsenical preparations is seldom effective.

(*Journ. Ment. Sci.* 1933, lxxix, 602.)

"The Physiological Basis of the Neuroses." By Dr. W. ROSS ASHBY. *Proc. Roy. Soc. Med.* 1933, xxvi, 1454.

(Short paper) "The Measurement of the Corpus Callosum in the Mental Defective." By Dr. W. ROSS ASHBY. *Journ. Ment. Sci.* 1933, lxxix, 553.

(With R. M. Stewart). "Size in Mental Deficiency." By Dr. W. ROSS ASHBY. *Journ. Neurol. & Psychopath.* 1933, xii, lii, 303.

## LXX.—FROM THE MONYHULL COLONY, BIRMINGHAM.

*General Report.*—By Dr. A. M. McCUTCHEON, F.R.F.P.S., Medical Superintendent.

### A.—*Tuberculin testing in an Institution Dairy Herd.*

Ten years ago, in order to reduce as far as possible the risk of the introduction of tuberculosis, it was decided to have the institution herd of cattle tuberculin tested every six months in accordance with the Regulations of the Ministry of Agriculture and Fisheries. The following gives some idea of the results. The tests have all been done on standardized lines by the City Veterinary Surgeon, and at first the subcutaneous test was used.

When the testing was first introduced there was not much breeding done, and most of the cattle were bought in. The results of the testing were most disappointing and illustrate the difficulties that many ordinary farmers must find on starting such a scheme.

For the last eight years careful records have been kept. During this time the average size of the herd was two pedigree bulls, 68 cows and 34 heifers. In all, 50 beasts were disposed of over the eight years after failing the test—26 milch cows, 13 eighteen months to 2 years old heifers, and one bull. Twenty-two of these were bought in the ordinary markets, and all had been tested before being bought. Ten per cent. of these failed at the first test after coming on to our farm at about 3 to 6 months after the initial test outside. The remainder were bred on our own farm except 3 from another institution farm.

From 1928 onwards the double intradermal test was used instead of the



subcutaneous, when the failures were much more numerous, 11 cattle failing to pass the first test.

It was then decided that we should raise our own stock and not buy from outside, except the pedigree bulls. It was hoped to raise the standard of the herd and also to limit the introduction of contagious abortion by so doing. The only exception was when 7 home-bred and tested heifers from an institution herd in the district were bought in 1930, with the result that 3 of these were failed at the next two tests.

In spite of the greatest care in herd management and careful rationing, cases still crop up from time to time. All reactors are immediately isolated and sold.

In 20 per cent. of the cases there is no history of tuberculosis in the family either clinically or by the test. In 80 per cent., however, there has been a previous history in some of the early members of the family of a positive result at the test, seeming to indicate a predisposition to the disease. There has never been any beast which had any clinical sign of the disease. All have been in excellent condition so far as external examination showed, and amongst them have been some of the best milkers in the herd. We are now proposing to weed out all descendants from beasts which have reacted.

Although we should have liked the figures to be better, they are a great improvement on many other herds of which we have knowledge. There is no doubt that although somewhat costly at the start, and causing some dislocation in the herd at the same time, the standard of production and the purity of the milk supplied have justified the trouble and time taken.

Since the farm is run on trading lines, finance is naturally of the greatest importance. From 1926–1931 the average purchase price per beast was £24, whilst for the same period the average disposal price for rejected beasts was £16.

Since 1931 no animals (other than pedigree bulls) have been bought, but according to the expert valuer's figures at annual valuation the average value is £20, whilst £13 10s. has been realized. In these later years the abnormal state of the markets must be remembered. Thus each failure represents a loss of somewhere about £8. In maintaining a tuberculin tested herd in this district, the fact of testing in our experience operates against the owner. When buying subject to the test the seller adds about £5 to the price per beast to cover the cost of testing and risks of failure. When an animal is sold, it is common knowledge that this is, as a rule, due to failure to pass the test, and the price obtainable is definitely lower as a consequence.

To this loss in selling price must be added the cost of raising the animal, and the loss in milk yield, both of which cannot be very accurately estimated.

Combined with the tuberculin testing we have taken steps to produce clean milk and installed sterilizing plant for utensils. These factors are of importance in the milk production and herd competitions of the Milk Recording Society for which we have entered for some years past, and to which increasing importance is now generally being given.

One thing which so far is not explained, is that a certain number of cows, perfectly healthy in appearance, in excellent condition and in full work, and with no history of tuberculosis, after passing the test for a number of times, become reactors although kept under excellent sanitary conditions and never in contact with the disease.

#### *B.—Serological and Bacteriological examination of admissions.*

We continued the examination of faeces and bloods of all admissions and transfers during the year. This was done in association with Holymoore Mental Hospital as part of the work of the Birmingham Joint Board for Mental Research.



Faeces for bacteriological examination, 151 specimens; blood for Wassermann and complete range of examinations for typhoid, dysentery and food poisoning groups, 85 specimens.

The findings of previous years were again seen in that no cases which gave a positive Widal had any previous history of a definite intestinal infection, and that the incidence rate by areas showed very little difference between one area and another.

LXXI.—FROM THE ROYAL EASTERN COUNTIES INSTITUTION FOR THE  
MENTALLY DEFECTIVE, COLCHESTER.

*General Report.*—By Dr. F. DOUGLAS TURNER, Medical Superintendent.

*A.—Research Department.*

This is the third year of the investigation into the causes of mental deficiency. From the beginning, Dr. L. S. Penrose has been in charge of the Department, and has had as his assistant, Miss D. E. Newlyn. It had been felt for some time that work was being hindered by insufficient assistance, and especially that more help was required in the investigation of the relations of patients, by a skilled psychologist. Most fortunately a lady who wishes to remain anonymous, heard of the difficulty and generously offered to give £300 a year for three years towards the Research Fund. This has enabled a second social investigator to be appointed, Miss Matthews, M.A. (Cantab.), who had also the diploma of the London School of Economics for their year's course in Mental Health, and had worked for three years at the East London Child Guidance Clinic.

Then it was found that the accommodation available was insufficient for the efficient carrying on of the investigation, and the Directors of the Institution have now built separate offices for the Research Department.

It has been previously explained that the five-year plan of research included a complete clinical, physical, and mental examination of the 1500 patients in the institution, and a searching investigation on a very strict scientific basis, into their personal and family histories, by every available means.

Of these 1,500, just 1,000 patients have now been examined physically and clinically. Over 600 family histories have been collected, and more than 500 are due to Miss Newlyn's work. The presence of an extra helper, Miss Matthews, has enabled the family history work to be speeded up and supplemented by intelligence tests of children who are related to the patients. The family history is complementary to the physical examination, and enables the diagnosis or classification made on clinical grounds alone, to be checked.

Altogether 300 people have been given mental tests in association with the family enquiry. This psychological work includes testing many individuals who are not directly connected with the Royal Eastern Counties' Institution, but who are being investigated in connection with the enquiry concerning the mentality of the children of defective parents. This enquiry is of the greatest interest. It is a line of work which, it is believed, has not been previously attempted. The Departmental Committee on Sterilization collected material bearing on this subject, but only in a few cases in the survey were intelligence tests applied to the individuals. It is hoped, therefore, that our results will be of precise scientific value. So far as can at present be judged, the mentality of the children does not follow very closely the mentality of the parents. Some low-grade parents, who are practically imbeciles, have children whose intelligence is within normal limits, whereas some of the children of the highest grade parents are idiots. It would be unscientific, however, to prejudge the issue of this enquiry, by making further comments here.

Among other special investigations which are being made, alongside the main work of examination and classification of patients, are the study



of the relationship of head size to intelligence, and the consideration of the part played by birth order in the production of mental deficiency. In the case of mongolism—a subject on which several new findings have already been reported—statistical analysis has given information on the question of birth order. Mongols are most often found towards the end of a family, and the effect has been attributed to maternal exhaustion. By collecting a large series of family histories of these cases, it has been demonstrated that the maternal age at the birth of the child, is a much more important factor than birth order. Professor R. A. Fisher has kindly examined the data, and has suggested applying a new method of statistical analysis to them. This analysis is a laborious proceeding, but the result is very interesting and seems to show that, whereas increasing maternal age is a very important aetiological factor, it may be that there is some residual effect due to birth order and that first born and last born children are slightly more likely to be affected, irrespective of the maternal age at which they were born.

With regard to the question of head size and intelligence, it has been possible to confirm what is already known, that there is a loose relationship between these two characters ; that is to say, the idiots have, on the whole, slightly smaller heads than the imbeciles, the imbeciles' heads are slightly smaller on the average than those of the feeble-minded, and the feeble-minded again have slightly smaller heads than the normal. The relationship, however, is not exact enough to enable anyone to predict intelligence by measuring the size of the head. The interpretation usually given to this relationship, is that the head size is a measure of the development of the brain. This conclusion, however, has been disputed, and it is interesting to note that the relative smallness of size of low-grade cases, is not confined to head measurements. If the weights of the patients are taken, it is found that the relationship between weight and intelligence is closer than that which exists between head size and intelligence. This has been demonstrated recently by Dr. Ashby on patients at Leavesden Mental Hospital, and these observations have been confirmed here. The whole question of the meaning of physical measurements in mental deficiency, requires much fuller investigation, and it is hoped, as time goes on, to provide some useful data from this point of view.

The following publications have issued from the Department during the last twelve months.

1. "The Blood Group Distribution in the Eastern Counties of England." By M. PENROSE and L. S. PENROSE.

The blood group distribution in 1,000 patients at the Royal Eastern Counties' Institution is recorded. Reasons are given for regarding these figures as representative of the distribution in the general population of the eastern counties of England. The distribution is found to resemble that in isolated districts in Holland. (*British Journal of Experimental Pathology*. 1933, Vol. xiv, p. 160.)

2. "A Study in the Inheritance of Intelligence." By L. S. PENROSE.

This study records a preliminary piece of research. The relationship of intelligence of children to that of their parents and to one another, has been studied in 100 families containing subcultural mental defectives. The likenesses found can be roughly accounted for by the assumption of alternative additive Mendelian genetic factors.

Although cases have been excluded from the survey in which there was any suggestion of secondary causes of mental deficiency, environmental factors may yet have been present which tended to alter the intelligence of the persons studied. Bad home conditions are connected with low intelligence of parents, but there is little evidence that the bad conditions by themselves cause low mentality in the children. On the other hand, the effect of age and parity of the mother on the intelligence of the child seems likely to be of importance. (*British Journal of Psychology*. Vol. xxiv, Pt. 1, July, 1933.)



3. "The Inheritance of Mental Characters." By L. S. PENROSE. (A lecture delivered to the Special Schools After-Care Sub-Committee on March 2nd, 1933, at Birmingham and printed in the *Special Schools Journal*, Vol. xxiii, June, 1933).

In this paper the popular conceptions of heredity are subjected to criticism, and an outline is given of recent work on the inheritance of mental characters. The importance is stressed of environmentally determined modifications in the individual which may act from the very beginning when the ovum is fertilized.

4. "Mental Defect." By L. S. PENROSE. (Published by Sidgwick & Jackson, Ltd., 1933.)

The first of a series of textbooks on Social Biology edited by Professor Lancelot Hogben of the London School of Economics. It contains a good deal of material drawn from the Research Department which has not been published elsewhere.

5. "A Contribution to the Genetic Study of Mental Deficiency." By L. S. PENROSE.

A family history is described in which mentally normal children are the offspring of an incestuous union between a man and woman of low mentality. (*British Medical Journal*, January 6th, 1934.)

6. "A Subcultural Family." By D. NEWLYN.

This paper contains a very full account of a family history of the type we meet with not infrequently in rural areas. It is particularly instructive in showing that the fact of certification under the Acts, taken by itself, gives very little information about mental ability. The certified members of a family may be as intelligent as—or even sometimes more intelligent than—those living and working in the general community. (*Eugenics Review*, January, 1934.)

#### B.—Psychological Tests.

During the year 1933, 712 routine mental tests were carried out by the Medical Officers. These are additional to the tests carried out in the Research Department. The number was made up as follows :—

Stanford-Binet scale	...	...	...	...	...	272
Burt's Reasoning tests	...	...	...	...	...	10
Porteus Maze tests	...	...	...	...	...	206
Koh's Block Design tests	...	...	...	...	...	113
Healy's Pictorial test No. 1	...	...	...	...	...	109
Merrill-Palmer tests	...	...	...	...	...	2

#### C.—Pathological and Clinical Investigations.

The following is a summary of the 393 examinations made during the year 1933 :—

Schick test, 65 (38.5 per cent. positive). Urine: routine, 144; special, 5; blood grouping, 13. Specimens sent to central laboratories, 160. Bacterial swabs and cultures, 6.

#### LXXII.—FROM THE STOKE PARK COLONY, STAPLETON, BRISTOL.

*General Report.*—By Dr. R. J. A. BERRY, F.R.C.S., Director of Medical Services.

During the year under review (1933) there was published by Messrs. Macmillan & Co., London, a volume of Stoke Park Monographs on "Mental Deficiency and Other Problems of the Human Brain and Mind." The volume was dedicated by the Staff to the memory of the late Revd. H. N. Burden, the Founder and First Warden of the Institution. Advantage



was taken of the opportunity presented to make available, in convenient form, an account of the methods employed at Stoke Park for the testing and measurement, physical and mental, of defective patients. At Stoke Park itself, there have now been examined by these methods 1,150 patients.

The collated results of these investigations, supplemented by ordinary and special clinical examinations, appear to suggest that mental deficiency is a clinical manifestation of an under-development of both body and brain. Should further research confirm this view the causation of at least all the primary amentias would appear to be of pre-natal origin, in which case a more profound study of normal and abnormal embryology may elucidate some otherwise obscure problems of aberrant mentality.

In this belief, and acting upon an additional suggestion made by one of the Commissioners of the Board of Control, all the brains of deceased defectives, when obtainable on post-mortem examination, have been specially preserved. One cerebral hemisphere has been mounted for macroscopic study and permanent display, and the other specially treated for subsequent microscopic investigation of the numbers, size and development of cortical cytons and cerebral interstitial tissues such as the macro- and micro-glial elements. At the moment the naked eye collection numbers one reputedly normal brain for comparison, and 29 defective brains of all legal grades—idiots, imbeciles, Mongolians, feeble-minded, porencephalic, and syphilitic. Of these brains, four have now been thoroughly investigated, both macroscopically and microscopically, and the results will be described in a paper to be published very shortly.

In consequence of the recent splendid donation of Mrs. R. G. Burden of £10,000 for the furtherance of mental research, the Burden Mental Trust has been called into being, and a representative Committee of Administration selected. This Committee has made the following appointments:—

Principal Investigator: J. A. Fraser Roberts, M.A., D.Sc., F.R.S.E.

Medical Assistant: R. M. Norman, M.D.

Psychological Assistant: Ruth M. Griffiths, B.A., Ph.D.

A commencement has been made with an enquiry based on unselected non-institutional cases, to include the examination on the same lines of a "control" group of normal families. Although these lines of research into the possible hereditary transmission of mental disorders were laid down before the publication of the Report of the Departmental Committee on Sterilization, they practically embody, amongst others, all the suggestions made by that Committee in paragraph 97 of their Report.

#### *Publications.*

In addition to the publication of the Stoke Park Monographs already referred to, the following have also appeared from the Research Laboratories of this Institution.

"The Merrill-Palmer Scale of Intelligence Tests for Pre-School Children applied to Low-Grade Mental Defectives." By R. G. GORDON. (*British Journal of Psychology*, Vol. xxiv, Part 2, October, 1933.)

"Neurological Abnormalities. Their Occurrence and Significance as illustrated by an Examination of 500 Mental Defectives." By R. G. GORDON, R. M. NORMAN and R. J. A. BERRY. (*Journal of Neurology and Psychopathology*, 1933, xiv, iv, 97.)

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## APPENDIX A.

COUNTY and BOROUGH MENTAL HOSPITALS, REGISTERED HOSPITALS, and LICENSED HOUSES in *England* and *Wales* with the Names of the Medical Superintendents, and Clerks to Committees of Visitors; Licensees, Clerks to Visitors, and Medical Visitors, of Licensed Houses (Corrected to September, 1934.)

## COUNTY AND BOROUGH MENTAL HOSPITALS.

COUNTIES, UNITED COUNTIES, AND BOROUGH.	WHERE SITUATE.	MEDICAL SUPERINTENDENTS.	CLERKS TO COMMITTEES OF VISITORS.
Beds, Herts, and Hunts	Arlesey, Beds	Laurence O. Fuller, L.R.C.P.	F. N. Butler, St. Neots.
Berks, Reading C.B., Newbury B., and New Windsor B.	Moulsford, Wallingford	W. W. Read, M.D.	J. T. Morland, Bath Street, Abingdon.
Brecon, Radnor, and Montgomery	Talgarth, Breconshire	P. Drummond, M.B.	A. J. Astbury, The Mental Hospital.
Bucks	Stone, Aylesbury	Hugh Kerr, M.D.	G. R. Crouch, County Hall, Aylesbury.
Cambs., Isle of Ely, and Cambridge B.	Fulbourn, Cambridge	H. T. Jones, M.B., D.P.M.	W. M. Francis, 10, Peas Hill, Cambridge.
Cardmarthen, Cardigan and Pembroke	Cardmarthen	S. Davies, M.B., D.P.M.	W. J. Wallis-Jones, 34, Quay Street, Cardmarthen.
Chester C., Birkenhead C.B., Stockport C.B. (part), and Wallasey C.B.	Upton, Chester	G. H. Grills, M.D.	H. Potts, 21, King Street, Chester.
Cornwall	Parkside, Macclesfield	H. D. Cormac, M.B., D.P.M.	G. W. Wain, 43, Church Side, Macclesfield.
Cumberland, Westmorland and Carlisle C.B.	Bodmin	W. G. Rivers, M.B.	M. F. Edyvean, Mount Folly, Bodmin.
Denbigh, Anglesey, Caernarvon, Flint, and Merioneth C.	Carlisle	J. T. H. Madill, M.B., F.R.F.P.S., D.P.M.	C. W. A. Hodgson, The Courts, Carlisle.
Derby C.	Denbigh	F. G. Jones, M.D.	W. Barker, M.B.E., The Mental Hospital.
Devon	Mickleover, Derby	E. L. Hopkins, M.C., L.R.C.P., D.P.M.	H. W. Skinner, County Offices, St. Mary's Gate, Derby.
Dorset	Exminster	R. Eager, O.B.E., M.D.	B. S. Miller, The Castle, Exeter.
Durham C. and Darlington C.B.	Dorchester	P. W. P. Bedford, M.D., D.P.M.	P. H. Morton, 51, High West Street, Dorchester.
Essex and Colchester B.	Winterton, Stockton on Tees	G. S. Wilson, M.B., D.P.M.	H. Jevons, Shire Hall, Durham.
"	Brentwood	W. G. Masfield, L.R.C.P., D.P.M.	H. H. Gepp, 66, Duke Street, Chelmsford.
"	Severalls, Mile End, Colchester	R. C. Turnbull, M.D.	Ditto
Glamorgan	Bridgend	D. R. Owen, M.B.	W. G. Jenkins, Glamorgan County Hall, Cardiff.
Gloucester C. and Gloucester C.B.	Gloucester	F. C. Logan, M.B.	E. B. Key, The Mental Hospital.
Hants, Bournemouth C.B. and Southampton C.B.	Knowle, Fareham	J. L. Jackson, M.B.	Lt.-Col. J. R. Wyatt, * O.B.E., The Mental Hospital.
"	Park Prewett, Basingstoke	V. L. Connolly, M.C., M.B., D.P.M.	H. Spooner, * The Mental Hospital.



Hereford C. and Hereford B.	...	Burghill, Hereford	...	G. W. T. H. Fleming, L.R.C.P., D.P.M.	F. Goldingay, The Mental Hospital.
Herts	...	Hill End, St. Albans	...	W. J. T. Kimber, L.R.C.P., D.P.M.	P. E. Longmore, Clerk of the Peace, Hertford.
Kent and Gravesend B.	...	Barming Heath, Maidstone	...	A. C. Hancock, M.C., M.B., D.P.M.	H. J. Bracher, † 44, Earl Street, Maidstone.
"	...	Chartham, Canterbury	...	Lt.-Col. M. A. Collins, O.B.E., M.D.	J. G. Pembroke, † Burgate Street, Canterbury.
Lancaster C., all the County Boroughs and Stockport C.B. (part).	...	Lancaster Moor	...	R. P. Sephton, L.R.C.P.	Allan Sewart, 49, North Road, Lancaster.
"	"	Rainhill, Lancs.	...	E. F. Reeve, M.B.	T. Garner, 49, Corporation Street, St. Helens.
"	"	Prestwich, Manchester	...	J. Gifford, M.B., D.P.M.	Sir Geo. Etherton, † County Offices, Preston.
"	"	Whittingham, Preston	...	A. R. Grant, M.D.	L. Cotman, 8, Lune Street, Preston.
"	"	Winwick, Warrington	...	F. M. Rodgers, O.B.E., M.D., D.P.H.	P. I. Dutton, M.B.E., The Mental Hospital.
Leicester C. and Rutland	...	Narborough, Leicester	...	K. K. Drury, M.C., M.D.	C. E. J. Freer, 10, New Street, Leicester.
Lincoln (Lindsey and Holland), Grimsby C.B. and Lincoln C.B.	...	Bracebridge, Lincoln	...	J. Macarthur, L.R.C.P., D.P.M.	H. E. Page, Bank Street, Lincoln.
Lincoln (Kesteven), Soke of Peterborough, and Grantham B.	...	Rauceby, Sleaford	...	N. K. Henderson, M.B., D.P.M., LL.B.	W. T. Phipps, County Offices, Sleaford.
London C.	...	Banstead Downs, Sutton	...	A. A. W. Petrie, M.D., F.R.C.P., F.R.C.S.E., D.P.M.	R. H. Curtis, Chief Officer, Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E.1.
"	...	Bexley, Kent	...	Geoffrey Clarke, M.D.	Ditto
"	...	Cane Hill, Coulsdon, Surrey	...	G. A. Lilly, M.C., M.D., D.P.M.	Ditto
"	...	Claybury, Woodford Bridge, Woodford Green.	...	Guy F. Barham, M.D.	Ditto
"	...	Colney Hatch, New Southgate, N.11.	...	John Brander, M.D., M.R.C.P., D.P.M.	Ditto
"	...	Ewell, Epsom	...	L. H. Wootton, M.C., M.B., D.P.M....	Ditto
"	...	Hanwell, Southall, Middlesex	...	A. W. Daniel, M.D.	Ditto
"	...	Horton, Epsom	...	W. D. Nicol, M.B., M.R.C.P., D.P.M.	Ditto
"	...	Long Grove, Epsom	...	F. G. L. Barnes, M.B., D.P.M.	Ditto
"	...	West Park, Epsom	...	N. Roberts, O.B.E., M.D., D.P.M.	Ditto
"	...	Springfield, Beechcroft Road, Tooting, S.W.17.	...	Reginald Worth, O.B.E., M.B.	H. S. Freeman, § Clarence Street, Staines.
"	...	Napsbury, St. Albans	...	A. O'Neill, O.B.E., L.R.C.P....	E. S. W. Hart, § Guildhall, Westminster, S.W.1.
"	...	Shenley, St. Albans	...	G. W. Shore, O.B.E., M.D., D.P.M. ...	Ditto.
Monmouth	...	Abergavenny	...	N. R. Phillips, M.D....	A. F. T. Stewart, The Mental Hospital.
Norfolk	...	Thorpe, Norwich	...	O. G. Connell, M.C., L.R.C.P.	J. Middleton, M.B.E., The Mental Hospital.
Northampton C.	...	Berrywood, Northampton	...	F. J. Stuart, O.B.E., L.R.C.P.	Major C.A. Markham, 1, Guildhall Rd., Northampton
Northumberland and Tynemouth C.B....	...	Cottingham, Morpeth	...	G. R. East, M.D.	Henry D. Irwin, 10, Ellison Place, Newcastle-upon-Tyne.
Notts C.	...	Radcliffe-on-Trent, Nottingham.	...	H. C. Waldo, L.R.C.P.	A. V. Simpson, The Mental Hospital.

† Clerks to the respective Sub-Committees. Clerk to the Kent Mental Hospitals Committee: H. J. Bracher. § Clerks to the respective Sub-Committees. Clerk to the Middlesex Mental Hospitals Committee: H. S. Freeman.

‡ Also Clerk to the Lancashire Mental Hospitals Board.

\* Clerks to the respective Committees. Clerk to the Hampshire Joint Committee: F. V. Barber, The Castle, Winchester.



## COUNTY AND BOROUGH MENTAL HOSPITALS—continued

COUNTIES, UNITED COUNTIES, AND BOROUGH.	WHERE SITUATE.	MEDICAL SUPERINTENDENTS.	CLERKS TO COMMITTEES OF VISITORS.
Oxford C. and Oxford C.B. ... ..	Littlemore, Oxford ... ..	T. Saxty Good, O.B.E., L.R.C.P.	F. G. Scott, County Hall, Oxford.
Salop, Shrewsbury B., and Wenlock B. ... ..	Bicton, Shrewsbury ... ..	W. S. Hughes, M.B. ... ..	W. L. Edge, Shirehall, Shrewsbury.
Somerset and Bath C.B. ... ..	Wells ... ..	J. McGarvey, M.B., D.P.M. ... ..	J. H. Coates,* The Mental Hospital.
" " " " ... ..	Cotford, Norton Fitzwarren, Taunton. ... ..	W. S. Graham, M.B.... ... ..	A. W. Caley,* The Mental Hospital.
Stafford C., and all the County Boroughs ... ..	Stafford ... ..	B. H. Shaw, M.D. ... ..	H. L. Underwood,† County Buildings, Stafford.
" " " " ... ..	Burntwood, Lichfield ... ..	W. Reid, M.B. ... ..	Ditto
" " " " ... ..	Cheddleton, Leek ... ..	W. F. Menzies, M.D., F.R.C.P. ... ..	Ditto
Suffolk (East and West) ... ..	Melton, Woodbridge ... ..	Lt.-Col. W. B. Keith, M.C., M.D. ... ..	C. Oakes, County Hall, Ipswich.
Surrey and Guildford B. ... ..	Brookwood, Woking ... ..	James A. Lowry, M.D. ... ..	D. Aukland, County Hall, Kingston-on-Thames.
Surrey ... ..	Netherne, Coulsdon, Surrey ... ..	F. C. Coombes, L.R.C.P. ... ..	Ditto
Sussex (East) ... ..	Hellingly, Sussex ... ..	F. R. P. Taylor, M.D. ... ..	Harold M. Blaker, 211, High Street, Lewes.
" (West) ... ..	Chichester ... ..	C. G. Ainsworth, M.B., LL.B. ... ..	G. H. B. Peters, 9, West Pallant, Chichester.
Warwick C., Coventry C.B., and Warwick B. ... ..	Hatton, Warwick ... ..		H. W. Blenkinsop, 1, New Street, Warwick.
Wight, Isle of ... ..	Whitecroft, Newport, I. of W. ... ..	C. W. S. Davies-Jones, M.B. ... ..	R. S. Curry, The Mental Hospital.
Wilts ... ..	Devizes ... ..	J. W. Leech, M.D., D.P.M. ... ..	G. W. Jackson, Devizes.
Worcester C., Dudley C.B., and Worcester C.B. ... ..	Powick, Worcester ... ..	H. F. Fenton, M.B. ... ..	J. L. Wood, Bank Buildings, Cross, Worcester.
Worcester C. ... ..	Barnsley Hall, near Broms- grove. ... ..	A. H. Firth, M.D. ... ..	C. H. Bird, Shirehall, Worcester.
York, E. Riding ... ..	Beverley ... ..	T. M. Davie, M.C., M.D., D.P.M. ... ..	Sir Godfrey Macdonald, Bt., County Hall, Beverley.
" N. Riding ... ..	Clifton, York ... ..	J. I. Russell, M.B., F.R.F.P.S., D.P.M. ... ..	Major H. H. Dryland, M.B.E., The Mental Hospital.
" W. Riding, and (except for Scale- bor Park) Barnsley, Bradford, Dewsbury, Doncaster, Halifax, Huddersfield, Leeds, Rother- ham, Sheffield and Wakefield C.B. ... ..	Menston, Leeds ... ..	R. C. Walker, M.D. ... ..	} G. L. Banner, A.S.A.A., Clerk to W.R. Mental Hospitals' Board, Victoria Chambers, Wood Street, Wakefield.
	Wadsley, Sheffield ... ..	A. Pool, M.B., M.R.C.P., D.P.M. ... ..	
	Wakefield ... ..	C. J. Thomas, L.R.C.P., D.P.M. ... ..	
	Storthes Hall, Kirkburton, Huddersfield. ... ..	C. W. Ewing, L.R.C.P., D.P.M. ... ..	
	§Scalebor Park, Burley-in- Wharfedale. ... ..	J. R. Gilmour, M.B., F.R.C.P.E. ... ..	Sir Charles McGrath, County Hall, Wakefield.
BOROUGH.			
Birmingham ... ..	Winson Green, Birmingham ... ..	C. W. Forsyth, M.D. ... ..	F. H. C. Wiltshire, Council House, Birmingham.
" ... ..	Rubery Hill, near Birming- ham ... ..	T. C. Graves, M.D., F.R.C.S.† ... ..	Ditto



Brighton ...	...	...	...	Haywards Heath, Sussex	G. H. Harper-Smith, M.D.	...	Jas. H. Rothwell, C.B.E., Town Hall, Brighton.
Bristol ...	...	...	...	Fishponds, Bristol	E. B. C. White, L.R.C.P.	...	J. Green, The Council House, Bristol.
Canterbury	...	...	...	St. Martin's Hill, Canterbury.	E. F. Sall, L.R.C.P.	...	G. W. Marks, Town Hall, Canterbury.
Cardiff ...	...	...	...	Whitchurch, Glamorgan	P. K. McCowan, M.D., D.P.M., M.R.C.P.	...	D. K. Rees, The City Hall, Cardiff.
Croydon ...	...	...	...	Warlingham, Whyteleafe, Surrey	H. M. Berncastle, L.R.C.P.	...	J. M. Newnham, Town Hall, Croydon.
Derby ...	...	...	...	Rowditch, Derby	John Bain, M.B.	...	G. T. Lee, Town Hall, Derby.
Exeter ...	...	...	...	Digbys, Topsham	D. McK. Reid, M.D., F.R.F.P.S.	...	C. J. Newman, Town Clerk's Office, Exeter.
Gateshead	...	...	...	Stannington, Newcastle-upon-Tyne.	H. E. Brown, M.B., D.P.M.	...	J. W. Porter, Town Hall, Gateshead.
Hull ...	...	...	...	De la Pole, Willerby, Hull	J. S. Anderson, L.R.C.P.	...	A. Pickard, Guildhall, Hull
Ipswich ...	...	...	...	Ipswich	P. Banbury, L.R.C.P., D.P.M.	...	A. Moffat, Town Hall, Ipswich.
Leicester ...	...	...	...	Humberstone, Leicester	Lt.-Col. J. F. Dixon, M.D.	...	H. A. Pritchard, Town Hall, Leicester.
London (City of)	...	...	...	Stone, Dartford	W. Robinson, M.D., D.P.M.	...	L. T. Feldon, 5, Church Passage, Guildhall, E.C. 2.
Middlesbrough	...	...	...	Cleveland, Middlesbrough	H. G. Drake-Brockman, L.R.C.P.	...	Preston Kitchen, Town Clerk's Office, Middlesbrough.
Newcastle-upon-Tyne	...	...	...	Gosforth, Newcastle-upon-Tyne.	H. D. MacPhail, O.B.E., M.D.	...	A. M. Oliver, Town Clerk's Office, Newcastle-upon-Tyne.
Newport ...	...	...	...	Caerleon, Mon.	M. R. Mackay, M.C., M.B.	...	O. T. Morgan, Town Clerk's Office, Newport, Mon.
Norwich ...	...	...	...	Hellesdon, Norwich	David Rice, M.D., D.P.H.	...	Noel B. Rudd, Guildhall, Norwich.
Nottingham	...	...	...	Mapperley Hill, Nottingham.	G. Ll. Brunton, M.D.	...	W. J. Board, Guildhall, Nottingham.
Plymouth	...	...	...	Blackadon, Ivybridge	E. G. T. Poynder, L.R.C.P., D.P.M.	...	R. J. Fittall, Town Clerk's Office, Plymouth.
Portsmouth	...	...	...	Milton, Portsmouth	T. Beaton, O.B.E., M.D., F.R.C.P.	...	F. J. Sparks, Guildhall, Portsmouth.
Sunderland	...	...	...	Ryhope, Co. Durham	M. A. Archdale, M.B., D.P.M.	...	H. Craven, Town Hall, Sunderland.
Swansea ...	...	...	...	Cefn Coed, Swansea	J. S. I. Skottowe, M.D., D.P.M.	...	H. L. Lang-Coath, The Guildhall, Swansea.
West Ham	...	...	...	Goodmayes, Ilford, Essex	J. H. Cuthbert, M.B., D.P.M.	...	C. E. Cranfield, Town Hall, West Ham, E.15.
York ...	...	...	...	Fulford, York	R. A. Hooper, M.B.	...	R. Anderson, Guildhall, York.

\* Clerks to the respective Sub-Committees. Clerk to Somerset and Bath Mental Hospitals Committee: A. W. Caley.

† Also Clerk to the Staffordshire Mental Hospitals Board.

‡ Also Medical Director of the Birmingham Mental Hospital, which comprises Winson Green Division and Rubery Hill with Hollymoor Division.

§ For private patients only.

HOSPITALS.

COUNTY.	REGISTERED HOSPITALS.	MEDICAL SUPERINTENDENTS.
Chester ... ..	Manchester Royal Hospital, Cheadle.	J. A. C. Roy. M.B.
Devon ... ..	Wonford House, Exeter ...	H. W. Eddison, M.D., D.P.M.
Gloucester ... ..	Barnwood House, Gloucester ...	A. A. D. Townsend, M.D.
Kent ... ..	*Bethlem Royal Hospital, Eden Park, Beckenham.	J. G. Porter Phillips, M.D., F.R.C.P.
Lincoln ... ..	The Lawn, Lincoln ... ..	Myra Mackenzie, M.B.
Norfolk ... ..	Bethel Hospital, Norwich ...	S. J. Fielding, M.B.
Northampton ... ..	St. Andrew's Hospital, Northampton.	D. F. Rambaut, M.D.
Notts ... ..	The Coppice, Nottingham ...	D. Hunter, M.B.
Oxford ... ..	The Warneford, Headington Hill, Oxford.	A. W. Neill, M.D.
Stafford ... ..	Coton Hill Hospital, Stafford	R. Macdonald, O.B.E., M.D., D.P.M.
Surrey ... ..	Holloway Sanatorium, St. Ann's Heath, Virginia Water.	H. Devine, O.B.E., M.D., F.R.C.P.
York City (N.R.)	Bootham Park, York ... ..	G. R. Jeffrey, M.D., F.R.C.P.E.
„ „ (E.R.)	The Retreat, York ... ..	Neil Macleod, M.D., D.P.M.
NAVAL AND MILITARY HOSPITALS :		
Hants ... ..	Royal Military Hospital, Netley, Southampton.	Maj. H. Gall, L.R.C.P.
Norfolk ... ..	Royal Naval Hospital, Gt. Yarmouth.	Surgeon-Commander F. L. H. MacDowel, R.N., L.R.C.P. & S.
CRIMINAL ASYLUM :		
Berks ... ..	State Criminal Asylum, Broadmoor, Crowthorne.	H. P. Foulerton, L.R.C.P., D.P.H.

\* Registered for 109 males and 141 females.



# METROPOLITAN LICENSED HOUSES.

HOUSES.	Number of Patients for which Licensed.			TO WHOM LICENSED.
	M.	F.	Total.	
For both Sexes: Camberwell, S.E. 5	...	...	...	Colonel R. H. W. Cardiff, Captain J. A. E. Drury-Lowe, and H. J. Norman, M.B., D.P.H.
Clapton, Upper, E.5	...	...	...	G. H. Johnston, L.R.C.P., Miss E. E. Monro and E. E. Rollins, M.B.
Finsbury Park, N. 4	...	...	...	A. H. Stocker, H. G. Stocker, and F. Dillon, M.D.
Hayes, Uxbridge ...	...	...	...	H. F. Stilwell, L.R.C.P., and Mrs. M. E. Stilwell.
Hillingdon, Uxbridge	...	...	...	R. J. Stilwell, L.R.C.P., and G. W. B. James, M.C., M.D., D.P.M.
Isleworth ...	...	...	...	G. W. Smith, O.B.E., M.B., and Mrs. S. R. M. Smith, M.B.
Peckham, S.E. 15	...	...	...	A. H. Stocker, H. G. Stocker, and F. R. King, L.R.C.P.
Pinner, Middlesex...	...	...	...	W. J. Coyne, M.D., D. I. O. Macaulay, M.D., D.P.M., Miss M. Davies, L.M.S.S.A., Miss A. E. Curthoys, and Miss C. Hegarty.
Roehampton, S.W.15	...	...	...	G. B. Postlethwaite, G. H. Day, J. Chambers, M.B., and B. W. Brown, M.B., D.P.M.
Shepperton...	...	...	...	Capt. H. O. S. Ellis, Lt.-Col. H. Dickenson, W. J. H. Haslett, L.R.C.P., Miss A. E. Bartlett and A. Holman.
Tooting Common, S.W. 17	...	...	...	J. N. Sergeant, M.B., Mrs. H. S. Sergeant, Miss M. F. Simms-Reeve, and Miss E. Reid.
Males only: Beckenham Lane, Catford, S.E. 6.	...	...	...	Col. W. H. F. à Beckett, Mrs. Enid à Beckett, W. F. Umney, M.D., D.P.M., and C. R. Menzies.

\* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

† Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Male Temporary Patients.

(a) Of whom 65 may be rate-aided patients: not more than 30 males and 45 females.

## METROPOLITAN LICENSED HOUSES—continued.

HOUSES.	Number of Patients for which Licensed.			TO WHOM LICENSED.
	M.	F.	Total.	
Females only:				
Clapham Park, S.W. 4 ...	—	12	12	J. A. Thwaites, Miss L. E. Thwaites, Miss L. M. Thwaites, and Mrs. L. A. Sparkes.
Staines, Middlesex... ..	—	14	14	F. B. Sutherland, M.B., D.P.H., and Mrs. B. S. Sutherland.
Hayes, Uxbridge ... ..	—	14	14	H. F. Stilwell, L.R.C.P., R. J. Stilwell, L.R.C.P., and Miss M. M. S. Davies.
” ” ... ..	—	19	19	R. J. Stilwell, L.R.C.P., Miss R. Cheek, and G. W. B. James, M.C., M.D., D.P.M.
Streatham Hill, S.W. 2 ...	—	30	30	E. W. White, C.B.E., M.B., M.R.C.P., Mrs. H. White, and J. H. Earls, M.D.
Sydenham, S.E. 26 ... ..	—	30	30	Capt. F. H. Little, Miss E. B. Brodie, and Mrs. M. A. H. Little.
Forest Hill, S.E. 23 ... ..	—	10	10	W. L. Bailey and Mrs. L. M. Robinson.

*q.* Limited to quiet and harmless cases.

\* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.



## PROVINCIAL LICENSED HOUSES.

COUNTY.	HOUSES.	TO WHOM LICENSED.	Number of Patients for which Licensed.			CLERK TO VISITORS.	MEDICAL VISITORS.
			M.	F.	T.		
Beds [Bedford Borough]	Bishopstone House, Bedford	N. H. Linzee, L.R.C.P., D.P.H., Mrs. B. C. Linzee, Miss A. A. Barber, Miss A. George, and Mrs. M. Rogers.	—	10	10	G. J. M. Whyley, Bedford.	H. M. Coombs, M.B.
Beds ...	*†Springfield House, Bedford	Mrs. M. L. Bower, C. W. Bower, L.M.S.S.A., Mrs. M. A. E. Bower, and Miss J. W. Kerr.	Not more than 24	37	48	J. B. Graham, ditto	E. C. Sharpin, L.R.C.P.
Derby ...	*†Wye House, Buxton ...	W. W. Horton, M.D., and Miss J. M. Dickson.	22	22	44	W. B. Bunting, Chapel-en-le-Frith.	W. Shipton, M.D.
Devon ...	*Court Hall, Kenton, Exeter	Miss B. M. Mules, M.D., and Miss A. S. Mules, L.R.C.P.	—	8	8	F. A. Pearce, Exeter	L. P. Black, M.B., D.P.H.
" ...	*Plympton House, Plympton.	Miss A. Keane, Miss C. Carroll and Miss K. Carroll.	—	44	44	R. B. Johns, Plymouth	E. L. Fox, M.D.
Durham ...	*†Middleton Hall, Middleton St. George.	R. H. O. Garbutt, L.R.C.P., T. C. Barkas, O.B.E., M.B., and J. W. Astley-Cooper, L.R.C.P.	21	44	65	G. H. Watson, Darlington	T. Beattie, M.D., F.R.C.P.
Essex ...	*Littleton Hall, Shenfield, Brentwood.	Miss M. G. E. Wilson, H. G. L. Haynes, L.R.C.P., and Mrs. M. Haynes.	—	25	25	H. F. Bawtree, Witham	R. W. Quennell, O.B.E., L.R.C.P.
Gloucester ...	*†Northwoods, Winterbourne Bristol.	H. J. Cates, M.D., and Mrs. R. Cates.	Not more than 35	35	50	L. M. Harris, 65, Stokes Croft, Bristol.	{ J.R. Charles, M.D., F.R.C.P. P. L. Moore, M.B.
" ...	*The Retreat, Fairford	A. C. King-Turner, M.B., C. J. King-Turner, L.R.C.P., and Mrs. E. Pearce.	—	—	(a) 50	Robert W. Ellett, Cirencester.	D. G. Cossham, M.B.

(a) Not more than 25 males.

\* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

† Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Male Temporary Patients.

## PROVINCIAL LICENSED HOUSES—continued.

COUNTY.	HOUSES.	TO WHOM LICENSED.	Number of Patients for which Licensed.			CLERK TO VISITORS.	MEDICAL VISITORS.
			M.	F.	T.		
Kent ...	*†Malling Place, West Malling, Kent.	G. H. Adam, L.R.C.P., and H. Gray, L.R.C.P., and Mrs. Irene Adam.	18	21	(a) 39	C. E. Warner, Tonbridge	{ W. M. Ramsden, M.D. Hy. A. Andrews, L.R.C.P.
Lancaster ...	*†Haydock Lodge, Ashton, Newton-le-Willows.	C. T. Street, L.R.C.P., Mrs. Mabel R. Street, J. C. Wootton, M.C., L.R.C.P., Mrs. M. Wootton, and Mrs. E. Mould.	Not more than 80	90	150	H. Hatton, Warrington	H. Langdale, M.D.
" [Liverpool City].	†Tue Brook Villa, Liverpool	J. M. Moyes, M.B., and Mrs. A. E. B. Moyes.	Not more than 38	26	52	C. T. Barton, Clerk to Justices, Liverpool.	{ R. I. Richardson, M.B. T. Clarke, M.D.
Lancaster ...	*Shaftesbury House, Formby, Liverpool.	Mrs. F. W. Gill, Mrs. E. M. Gill, and John W. Jones.	Not more than 10	40	40	G. W. Swift, 74, Hanover St., Liverpool.	H. Langdale, M.D.
Norfolk [Norwich City].	*†Heigham Hall, Norwich	J. A. Small, M.B., and Maj. D. D. Milne.	40	75	95	J. F. Betts, Norwich	H. J. Starling, M.D.
" ...	*The Grove, Catton Grove Road, Norwich.	Miss H. M. McLintock.	—	(c) 21	21		
Shropshire ...	†Stretton House, Church Stretton.	J. C. Baker, M.B., S. T. H. Lane, and Mrs. P. Hancocks	40	—	40	W. L. Edge, Shirehall, Shrewsbury.	H. W. Gardner, M.B.E., M.D., F.R.C.P.



ERRATUM.

BOARD OF CONTROL: TWENTIETH ANNUAL  
REPORT, PART II.

P. 145. Stafford—Ashwood House.

J. F. G. PIETERSEN, L.R.C.P., should be substituted  
for H. G. Peacock, L.R.C.P., in Col. 3.

Shropshire ...	*Grove House, All Stretton	J. McClintock, L.R.C.P., Mrs. F. E. G. McClintock, Miss G. M. T. Daniell and Mrs. G. M. Lane.	—	40	40	W. L. Edge, Shirehall, Shrewsbury.	H. W. Gardner, M.B.E., M.D., F.R.C.P.
Somerset ...	*Bailbrook House, Bath-easton.	J. R. Benson, F.R.C.S., E. M. Wright, and S. J. Gilfillan, O.B.E., M.B.	Not more than 11	36	44	C. E. Newman, 14, Boulevard, Weston-super-Mare.	R. E. Moorhead, L.R.C.P., J. R. Charles, M.D., J. Wallace, O.B.E., M.B., John Allen, M.B., and W. H. Maidlow, M.D.
" (Bristol City)	*†Brislington House, Bristol	Mrs. A. Fox, J. M. Rutherford, M.B., and F. E. Fox, L.R.C.P.	44	62	106	S. Young, Petty Sessional Court House, Bristol.	Annie F. M. Cornall, F.R.C.S.I., W. H. Cory, M.R.C.S., and Colston Wintle, L.R.C.P.
Stafford ...	Ashwood House, Kingswinford, Dudley.	H. G. Peacock, L.R.C.P., and Mrs. Ida S. Pietersen.	11	20	31	H. L. Underwood, County Buildings, Stafford.	C. Reid, O.B.E., M.B.
"	Moat House, Tamworth	W. Lowson, M.B., and Miss D. E. Bagnall.	—	16	16	Ditto ditto	Ditto.
Sussex, East	*†Ticehurst House, Ticehurst.	C. F. F. McDowall, M.D., H. A. H. Newington, D. H. Cooper and H. McMahon.	41	51	92	H. J. T. McIlveen, County Hall, Lewes.	J. W. McK. Nicholl, M.D.
"	*St. George's Retreat, Burgess Hill.	Miss Ward, Miss McEvoy, Miss Keane, and Miss Collins.	—	75	75	Ditto ditto	Ditto.
"	Periteau House, Winchelsea, Sussex.	H. Baird, M.D., and Mrs. I. M. Baird	—	5	5	Ditto ditto	Ditto.
" [Hastings Borough]	Ashbrook Hall, Hollington	Charles E. H. Somerset.	—	q. 6	6	F. G. Langham, 44A, Robertson-street, Hastings.	E. M. Barker, M.B.
Warwick ...	*Glendossill, Henley - in - Arden.	W. Agar, L.R.C.P., and Mrs. Mary D. Agar.	12	33	40	A. C. Burrows, 1, New Street, Warwick.	W. R. W. Asplen, M.D.
Wilts [New Sarum City].	*†The Old Manor, Salisbury	S. E. Martin, M.B., and P. W. Carruthers, M.B.	—	—	672	A. C. Jonas, Salisbury...	E. T. Fison, O.B.E., M.D., F.R.C.S., and R. C. Monnington, M.D.

g. Limited to quiet and harmless cases.

(a) Proportion of sexes may be varied.

(b) Of whom 20 may be rate-aided patients.

(c) Of whom 25 may be rate-aided patients.

\* Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Female Temporary Patients.

† Approved under Sec. 5 of the Mental Treatment Act, 1930, for the reception of Male Temporary Patients.





APPENDIX B.  
 INSTITUTION PROVIDED BY A LOCAL AUTHORITY FOR VOLUNTARY PATIENTS ONLY.

Name of Institution.	Address.	Medical Superintendent.	Owning Authority.
Maudsley Hospital ... ..	Denmark Hill, London, S.E.5	E. Mapother, M.D., F.R.C.S., F.R.C.P.	London County Council.

APPENDIX C.  
 HOSPITALS APPROVED FOR THE RECEPTION OF VOLUNTARY AND TEMPORARY PATIENTS.

Name of Hospital.	Address.	Number of Patients for which approved.			Person in Charge.
		M.	F.	T.	
Hull Royal Infirmary* ... ..	Hull.	—	—	—	J. S. Anderson, L.R.C.P.
St. John's Hospital ... ..	Morden Hill, Lewisham, S.E.13.	1	1	2	J. C. Gilbert.

APPENDIX D.  
 NURSING HOMES APPROVED FOR THE RECEPTION OF VOLUNTARY AND TEMPORARY PATIENTS.

Name of Nursing Home.	Address.	Number of Patients for which approved.			Name of Proprietor.
		M.	F.	T.	
Silverton Lodge ... ..	118, Church Road, Upper Norwood, S.E.19.	—	4	4	Miss Margaret B. Macleod.
Riverhead House ... ..	Sevenoaks, Kent	—	8	8	Mrs. M. L. Macartney.
Tykeford Abbey ... ..	Newport Pagnell, Bucks.	—	6	6	D. E. M. Douglas-Morris, L.M.S.S.A.
Dorset House... ..	Clifton Down, Bristol.	—	25	25	Miss E. Casson, M.D., D.P.M.
Mount Pleasant ... ..	Clevedon, Somerset.	—	3	3*	Mrs. N. C. Whitfeld.
The Hall ... ..	Harrow Weald.	—	—	2	E. Lincoln Williams, L.R.C.P.
Boughton Hall ... ..	Chester.	—	8	8	C. J. Tisdall, M.D.
Arthington ... ..	Barton Road, Torquay.	—	—	8	Messrs. Arthington, Ltd.
The Elms ... ..	93 Belmont Hill, Lewisham, S.E. 13.	—	—	4	J. J. Reidy, M.D.
42, Ashburnham Road ... ..	Bedford.	—	9	9	N. H. Linzee, L.R.C.P., D.P.H.
Eyhurst Court ... ..	Kingswood, Surrey.	Not 27	more 31	than 35	Eyhurst Court, Ltd.

\* Voluntary only.



## APPENDIX E.

STATE and CERTIFIED INSTITUTIONS, CERTIFIED HOUSES, and APPROVED HOMES under the MENTAL DEFICIENCY ACT, 1913, with the Names of Managers or Owners, Clerks to Visitors, and the Number and Class of Patients.

(Corrected to September, 1934.)

## STATE INSTITUTION.

COUNTY or COUNTY BOROUGH within which the Institution is situated	Name and Address of Institution.	Names of Managers or Owners.	Name of Superintendent.	Number and Class of Defectives.
Nottingham ...	Rampton, Retford ...	The Board of Control, Caxton House West, London, S.W.1.	F. E. E. Schneider, M.D., D.P.M.	652 males and 499 females of dangerous or violent propensities.
Lancashire ...	Branch: Moss Side, Maghull, Liverpool.	Do. do. do.	C. H. G. Gostwyck, M.B., F.R.C.P., D.P.M.	150 males and 156 females of dangerous or violent propensities.

## CERTIFIED INSTITUTIONS.

COUNTY or COUNTY BOROUGH within which the Institution is situated C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Bedfordshire ...	Bromham House, Bromham, Bedford.	Beds. and Northants Joint Board.	J. B. Graham, Shire Hall, Bedford.	24 high-grade adult males.
Berkshire ...	Cumnor Rise, Cumnor	The Oxford Branch of the National Association for Promoting the Welfare of the Feeble-minded. Hon. Sec. of Branch :—Mrs. J. E. Pease, 2, Holywell, Oxford. Middlesex County Council.	H. J. C. Neobard, Shire Hall, Reading.	34 feeble-minded females. The age of admission is from 14 years. Epileptics and fallen women not taken.
Bucks ...	Craufurd Home, Gringer Hall, Maidenhead. The Manor House, Aylesbury.	The Bucks M.D. Committee.	Ditto ditto	102 adult females and 14 cot and chair cases. 99 patients.
Carmarthen ...	Pantglas Hall, Llanfynydd Road, Carmarthen.	The West Wales Joint Board ...	H. Fisher, County Hall, Aylesbury. D. Johns, County Offices, Carmarthen.	117 females of 7 years of age and upwards. Trainable cases only.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Cheshire ...	Ashton House, 26, Village Road, Oxtan, Birkenhead. Mary Dendy Home, Sandlebridge, Alderley Edge.*	Committee of Management ... Incorporated Lancs and Cheshire Society for the Permanent Care of the Feeble-minded. Sec.:—E. M. Richards, 72, Bridge Street, Manchester, 3 Cheshire Joint Board ...	E. W. T. Gasking, Birkenhead. G. C. Scrimgeour, Northgate Street, Chester. Do. do. F. A. H. Sheers, Truro. Do. do.	64 high-grade feeble-minded girls. Admission over 14 years of age. 425 of either sex. <i>Certified by Board of Education for 115 boys and 45 girls.</i> 62 adult high-grade females. 10 Roman Catholic female adults. High or medium grade. 111. Not more than 34 employable female adults, and not more than 77 low-grade juveniles of either sex.
Cornwall...	Convent of the Good Shepherd, St. Anne's, Saltash. St. Columb Major Institution.	Committee of Management ... Cornwall C.C. ...	F. A. H. Sheers, Truro. Do. do.	65 feeble-minded Roman Catholic females, aged 16 years and over. Criminals, epileptics and fallen women not accepted. Poor Law cases received. 120 males and 65 females.
Cumberland ... (Carlisle C.B.)	Durran Hill House, Carlisle. Dovenby Hall Colony, Cockermouth.	Managers: Sisters of The Sacred Hearts of Jesus and Mary. Corres.: The Rev. Father Leo Prescott, St. Gregory's Church, Deepdale, Preston. Cumberland, Westmorland & Carlisle Joint Committee for the Mentally Defective.	F. G. Webster, 15, Fisher Street, Carlisle. C. W. A. Hodgson, The Courts, Carlisle.	108 females. 400 females.
Derby ...	Aston Hall, Aston-upon-Trent. Whittington Hall, Chesterfield.	Nottingham County Borough Council ... The Incorporation of National Institutions for Persons requiring Care and Control. Mrs. Burden, The Warden, 14, Howick Place, Victoria Street, London, S.W.1.	W. B. Bunting, Chapel-en-le-Frith. Do. do.	39 females. Not more than 33 able-bodied imbeciles under 16 and not more than 6 feeble-minded adults.
(Derby C.B.) ...	Thornhill, Trowels Lane, Derby.	Derby Borough Corporation ...	W. R. H. Whiston, Idridgehay, Derby.	

\* Certified as a Special School by Board of Education.



## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Devon ... (Exeter C.B.)	The Devon and Exeter Home of the Good Shepherd, Holloway Street, Exeter; <i>with ancillary premises</i> : The Chantry, Exeter; <i>and</i>	...	J. I. Pengelly, The Court House, Exeter.	162 feeble-minded females. 84 at Devon and Exeter Home, 21 at The Chantry, and 57 (40 cot and chair cases of either sex and 17 high or medium grade females over 16 years of age) at the Home of the Holy Innocents.
"	The Home of the Holy Innocents, Franklyn, St. Thomas, Exeter.			
(Plymouth C.B.)	Hampton House, Ebrington St., Plymouth.	The Committee of the Plymouth, Devonport and Stonehouse Penitentiary and Home.	J. Bone, Guildhall, Plymouth.	20 female adults.
	Stoke Lyne, Withycombe, Exmouth.	County Council of Devon ...	F. A. Pearce, 14, Castle Street, Exeter.	47 males and 5 females.
	Western Lodge, Crediton Box House, Axminster	Do.	Do.	50 female adults.
	Royal Western Counties Institution, Starcross, near Exeter; * <i>with ancillary premises</i> : Elm Court, Starcross;	Do.	Do.	50 male and 56 female adults.
	The Hostel, 13, Dix's Field, Exeter; Langdon Farm Hostel, Dawlish; and "Dunesc," Teignmouth.	Committee of Management	Do.	420 males and 241 females.
Durham ...	Monkton Hall Home for Lads, Monkton, Jarrow-on-Tyne.	The Committee of the North-Eastern Association for the Care of the Feeble-minded. Sec.:—J. Stewart, 90, Pilgrim Street, Newcastle-upon-Tyne. Committee of Management Sec.: Mrs. Blackett, 50, South Street, Durham.	G. H. Watson, Darlington.	79 male feeble-minded cases. Age on admission, 16 to 20 years.
	St. Catherine's Home, Allergate, Durham.		Do.	8 females. Feeble-minded and moral, under the age of 18 years at time of admission.

*Certified by Board of Education for 100 patients.*

Essex	...	... Bigod's Hall, near Dun- mow, Essex.*  Brunswick House, Mist- ley.  The Mutual Sana- torium (New Lodge, Leon House, The Homestead and St. Keverne). Billericay. Etloe House, Church Road, Leyton, E.10.  Royal Eastern Counties Institution, Colches- ter,*† with ancillary premises: Lexden House, Colchester; East Hill House School, Colchester; Hillsleigh, 10, East Hill, Col- chester; Greenwood Schools; Halstead; Crossley House, Clac- ton; Bridge Home, Witham; The Re- treat, Witham; Tabor House, Witham; Gt. West Hatch, Chig- well; and Littleton House School, Girtton, Cambridge. Girls' Village Homes, Barkingside, with ancillary premises: Warlies, Upshire, Wal- tham Cross. The Colony, South Ockendon.	... Sisters of The Sacred Hearts of Jesus and Mary. Corres.: The Bishop of Brentwood, Bishop's House, Brentwood. The L.C.C. Mental Hospitals Committee... Chief Officer, Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E.1. The Mutual Sanatoria, Ltd. ... Sec.: — A. J. Read, New Lodge, Billericay.  Corresponding Manager:—Miss S. Rosalie Dunn.  Board of Directors ... (Medical Superintendent: F. D. Turner, M.B.)  Dr. Barnardo's Homes National Incorpo- rated Association  West Ham County Borough Council. ...	Do.  H. F. Bawtree, Witham.  Do.  Do.  Do.  Do.  C. W. Denton, 8, East Stockwell Street, Colchester.  A. Tabrum, Cambridge. H. F. Bawtree, Witham. Do.  Do.	473 males and females, all classes.  6 males. Imbeciles and feeble-minded up to the age of 16 years. <i>Certified by Board of Education for 61 boys.</i> 75 higher grade employable males, not less than 16 years of age. Reserved for London cases only. 54 males, excepting those who are dangerous to themselves or others, runaways, or who require physical restraint and are unsuitable for care on the "open-door" system. 120 feeble-minded females, from 16 years of age and of the Roman Catholic religion. Poor Law cases received. 1,320 males and females. <i>Certified by Board of Education for 139 boys or girls and by Home Office for 17 girls.</i> Main institution—558 males and females. Lexden House—65 adult females. East Hill House—60 males, of whom 4 may be cases over 16 years of age. Hillsleigh—48 boys of school age. Greenwood—90 females. Crossley House—61. Bridge Home—291 adult males. The Retreat—33 males. Tabor House—44 crippled adult males. Gt. West Hatch—59 adult females.  Littleton House—11 males.  150 females, imbecile and feeble-minded from 5 years of age. 65 high to medium grade adult females.  44 male and 30 female adults, and 40 male and 20 female juveniles.
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\* Certified as a Special School by Board of Education.

† Certified as a Special Industrial School by Home Secretary.



## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situated C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Flint ...	Coed Du Hall, Rhymwyn, Mold ...	Denbigh M. D. Committee ...	J. Harvey-Davies, County Offices, Mold.	53 adult and 19 juvenile females.
	Broughton Institution, Broughton, Chester.	Flint County Council ...	G. C. Scrimgeour, Northgate Street, Chester.	32 active medium to low grade females over the age of 16 years, and 12 active imbeciles of each sex under the age of 16 years.
Glamorgan ...	Drymma Hall, Skewen, near Neath.	Glamorgan County Council (Medical Superintendent: E. Lewis, F.R.F.P. & S.G., L.R.C.P. & S.)	W. G. Jenkins, County Hall, Cardiff.	79 females. All classes within the meaning of the Act.
	Hensol Castle, Pontyclun, Glam.	Glamorgan County Council (Medical Superintendent: Edward Lewis, F.R.C.P.)	Do. do.	100 high to medium grade adult males.
(Swansea C.B.)	Llwyn Eryr Training Home, Morriston, Swansea.	Swansea County Borough Council ...	J. Lake, Central Police Buildings, Swansea.	27 female adults.
Gloucester ...	Brentry Certified Institution, Westbury-on-Trym, Bristol ...	Board of Management ... Hon. Sec.:—E. R. Abbott, 13, Victoria Street, London, S.W.1. (Medical Superintendent: G. R. A. de M. Rudolf, M.R.C.P., D.P.M.)	L. M. Harris, 65, Stokes Croft, Bristol.	367. All classes within the meaning of the Act, being males over the age of 18 years.
	St. Mary's Home, Painswick, near Stroud.	The Committee of Management ... Hon. Sec.: Miss M. B. Gibbs, Yew Tree House, Painswick, nr. Stroud.	R. L. Moon, Shire Hall, Gloucester.	29 female feeble-minded cases. Age on admission 14 to 25 years, and of the Church of England. Cases over the age of 25 to be received only with the previous consent of the Board.
	Hortham Colony, Almondsbury, Bristol	Bristol City Council. (Medical Superintendent: W. Wyatt, M.B., D.P.M.)	L. M. Harris, 65, Stokes Croft, Bristol.	304 of each sex.
	Stoke Park, Bristol, with ancillary premises: Hanham Hall, Hanham; Leigh Court, Abbot's Leigh, near Bristol.	The Incorporation of National Institutions for Persons requiring Care and Control. Mrs. Burden, The Warden, 14, Howick Place, Victoria Street, London, S.W.1. (Director of Medical Services: R. J. A. Berry, M.D., F.R.C.S., Ed.).	Do. do.	1,818 patients, of whom not more than 910 shall be males and not more than 950 shall be females, distributed as follows:— Stoke Park Colony ... 1,318 Hanham Hall ... 240 Leigh Court ... 260

(Bristol C.B.)	Chasefield Laundry Home, 874, Fishponds Road, Fishponds, Bristol.	The Sub-Committee of the Bristol Preventive Mission (for the management of Chasefield). Hon. Sec.:—Mrs. M. Z. Heath, 13, Harcourt Road, Redland, Bristol.	S. Young, Petty Sessional Court House, Bristol.	40 feeble-minded females. Poor Law cases received.
(Do.)	The Royal Fort Home, St. Michael's Hill, Bristol	The Sub-Committee of the Bristol Preventive Mission.	Do. do.	30 females. High-grade adults on licence from other Certified Institutions.
Hampshire ...	Coldeast Colony, Sarisbury, Southampton.	Hampshire Joint Mental Health Institutions Committee.	A. J. Rogers, Magistrates Clerk's Office, Southampton.	175 males and 325 females, of whom, 125 males and 75 females shall be under the age of 16 years.
	Tatchbury Mount Colony, West Totton.	Ditto.	Do. do.	56 male adults.
(Portsmouth C.B.)	St. Paul's House, 66, King Street, Portsea.	The Free Church Women's Council (Portsmouth and District). Hon. Sec.:—Mrs. F. Parker, 2, Lorne Road, Southsea.	B. J. Tay, The Guildhall, Portsmouth.	7 high-grade female adults.
	St. Mary's Home, Alton, Hants, with ancillary premises:	Sisters of the Community of St. Mary the Virgin, of Wantage, Berks.	A. J. Rogers, Magistrates Clerk's Office, Southampton.	45 females over the age of 16 years, who may have had illegitimate children. Poor Law cases received.
	The Home of the Holy Rood, Worthing; Thorpe Place, Thorpe, Chertsey, Surrey;		J. E. Seager, County Hall, Chichester. D. Aukland, County Hall, Kingston-on-Thames.	Not more than 14 at the Home of the Holy Rood. 8 high-grade adult females.
	St. Mary's Home, Halton, Hastings; and St. John's Hostel, 17, Grove Park, Denmark Hill, S.E.5.		F. G. Langham, Palace Chambers, White Rock, Hastings.	12 high-grade females between the ages of 16 and 40 years.
	Mount Tabor, Darlington Road, Basingstoke, with ancillary premises: St. John's House, Sherborne Rd., Basingstoke.	The Sisters of the Transfiguration ...	John Dix, Sessions House, Newington, S.E.1. A. J. Rogers, Magistrates Clerk's Office, Southampton.	8 high-grade adult females. 50 feeble-minded females 16 years of age and over. Church of England cases only.
			Do. do.	20 active low-grade juvenile females.



## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situated C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Herts ...	Hillside, Buntingford, Herts.	Westminster Diocesan Education Fund ... Sec.:—Archbishop's House, Westminster, London, S.W.1.	Elton Longmore, Hertford.	48 juvenile male trainable imbeciles.
	Barvin Park (St. Raphael's), Northaw, Potter's Bar.	Do. do.	Do. do.	93 feeble-minded adult males of the Roman Catholic religion.
	The Middlesex Colony, Harper Lane, Shenley, St. Albans.	Middlesex County Council. (Medical Superintendent: H. E. Beasley, M.B., D.P.M.)	Do. do.	589. Not more than 431 males and not more than 158 females.
	Kingsmead Schools, Ware Road, Hertford.*	Managers appointed by the Herts County Council.	Do. do.	22. All classes. 10 adult females and 12 of an age and degree of mental defect such as would permit of their being housed and instructed with children, for whom the School is primarily intended. <i>Certified by Board of Education for 70 boys and 56 girls.</i>
	St. Elizabeth's Home for Epileptics, Much Hadham.*	Westminster Diocesan Education Fund ...	Do. do.	School—3 males and 3 females. <i>Certified by Board of Education for 14 boys and 42 girls.</i>
	Cell Barnes Colony, St., Albans.	Sec.:—Archbishop's House, Westminster, S.W.1.	Do. do.	<i>Colony</i> —104 females. Idiots, imbeciles, and feeble-minded cases of the Roman Catholic religion. 300 male and 300 female defectives.
Kent ...	Princess Christian's Farm Colony, Hildenboro', Kent.	Hertfordshire County Council (Medical Superintendent: N. H. M. Burke, L.R.C.P., D.P.M.). National Association for the Feeble-minded, 72, Denison House, 296, Vauxhall Bridge Road, Westminster, S.W.1.	C. E. Warner, Tonbridge.	71 males, 68 females.
	West View, Tenterden.	Kent County Council.	S. G. Champion, Tenterden.	180 females.
	Leybourne Grange, West Malling, Maidstone.	Do. do. (Medical Superintendent: R. F. Jarrett, F.R.F.P.S.)	C. E. Warner, Tonbridge.	71 adult females.

Lancashire (Liverpool C.B.)	Allerton Priory R.C. Special (M.D.) School, Woolton, Liverpool.*†	Board of Management Hon. Sec.:—Rev. J. Bennett, 1a, Trueman Street, Liverpool.	C. T. Barton, Clerk to Justices, Liver- pool.	1 male and 40 females. Feeble-minded cases of a degree of mental defect such as will permit of their living in association with and being instructed or trained with the children for whom the School is primarily intended. <i>Certified by Board of Education for 123 girls, and also certified by Home Office.</i>
	Calderstones, Whalley, near Blackburn.	Lancashire Mental Hospitals Board Clerk:—Sir George Etherton, County Offices, Preston. (Medical Superintendent:—F. A. Gill, M.D., C.M.)	L. Cotman, 8, Lune Street, Preston.	1,110 males and 1,218 females. All classes including epileptics.
(Do.)	Brockhall, Langho, near Blackburn.	Lancashire Mental Hospitals Board (Medical Superintendent:—R. B. F. McKail, M.B., D.P.M.)	Do. do.	262 males and 496 females. All classes, including epileptics.
	Dovecot (Horticultural School), Knotty Ash, Liverpool.*†	Dovecot Committee Hon. Sec.: Miss Corbett-Lowe, Flat 3, 45, Cambridge Street, Liverpool 8.	C. T. Barton, Clerk to Justices, Liver- pool.	30 feeble-minded females; 26 over the age of 16 and 4 of an age and of a degree of mental defect such as would permit of their being housed and instructed with the children for whom the school is primarily intended. <i>Certified by Board of Education for 38 girls and by Home Office for 64 girls.</i>
(Do.)	Gillibrand Hall, Chorley	Committee of Management Hon. Sec.:—Rev. J. Bennett, 1a, Trueman Street, Liverpool.	L. Cotman, 8, Lune Street, Preston.	46 female feeble-minded cases. Prin- cipally adults with a limited number of children under 16.
	Lisieux Hall, Whittle le Woods, Chorley.	The Congregation of the Brothers of Charity.	Do. do.	49 adult males.
	The Home, 4, Everton Terrace, Liverpool.	Committee of Management Hon. Sec.: R. H. Gardner, Incewood, Park Road, Liverpool.	C. T. Barton, Clerk to Justices, Liver- pool.	20 females. Feeble-minded and moral defectives over the age of 16 years.
	Pontville R.C. Special School, Aughton, Ormskirk.*†	Board of Management Hon. Sec.:—Rev. J. Bennett, 1a, Trueman Street, Liverpool.	G. W. Swift, 74, Hanover Street, Liverpool.	25 males: Roman Catholic feeble- minded children between the ages of 5 and 16 years. <i>Certified by Board of Education for 121 boys and by Home Office for 121 boys.</i>

\* Certified as a Special School by Board of Education.

† Certified as a Special Industrial School by Home Secretary.



## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Lancashire—contd.	Royal Albert Institution, Lancaster.	Central Committee of Management ... (Medical Superintendent: W. H. Coupland, L.R.C.P. & S., Ed.)	J. T. Sanderson, 67, Church Street, Lancaster.	800 males and females.
Leicester ... (Leicester C.B.)	Leicester Frith, Groby Road, Leicester.	The County Borough Council of Leicester. Clerk of the M.D. Committee, Alliance Chambers, Horsefair Street, Leicester.	L. E. Rumsey, 10, New Street, Leicester.	277 males and females, including those in ancillary premises.
	Stretton Hall, Leicester	The Leicestershire and Rutland Joint Board.	Do. do.	Not more than 10 males or 40 females. Total, 50.
Lincoln (Lindsey)	Caistor Institution, Kel-sea Road, Caistor.	Lindsey County Council ...	E. W. Scorer, Lincoln.	36 males and 66 females over the age of 16 years.
London ...	The Helping Hand Home, 16, Cathcart Hill, Highgate, N.19.	Committee of the Association for Helping Mentally Deficient Children. Hon. Sec.:—Mrs. Geoffrey Russell, 17, Church Row, Hampstead, N.W.3.	Jno. Dix, Sessions House, Newington, S.E.1.	30 feeble-minded females, preferably from the age of 16 years.
	London Lock Hospital, 283, Harrow Road, W.9.	Committee of Management ...	Do. do.	7 female feeble-minded and moral defectives.
	South Side Home, Streatham Common, S.W.16	The L.C.C. Mental Hospitals Committee... Chief Officer:—Mental Hospitals Dept., The County Hall, Westminster Bridge, S.E.1.	Do. do.	80 female high-grade feeble-minded adults who, save with the previous consent of the Board of Control, shall be on licence from other Certified Institutions.
	St. Teresa's, 97, Belmont Hill, Lewisham, S.E.13.	Committee of Management ...	Do. do.	120 female adults, high and medium grade.
	Walsham How Home, 64, St. Ann's Hill, Wandsworth.	The Church Army. Hon. Secretary: Mrs. Cannon, 57, Bryanston Street, Marble Arch, W.1.	John Dix, Sessions House, Newington, S.E.1.	15 employable adult female defectives.
Middlesex ...	Bramley House, Clay Hill, Enfield.	Middlesex C.C.	E. S. W. Hart, Guildhall, Westminster, S.W.1.	50 female feeble-minded cases, aged 16 years and upwards.

Pield Heath House School, Hillingdon, Uxbridge.*†	Westminster Diocesan Fund Sec. :—Rev. J. B. Bagshawe, Archbishop's House, S.W.1.	Do.	do.	53 females. Feeble-minded and moral defectives of the Roman Catholic religion. Total cases not to exceed 123, and all to be fit for association with children. <i>Certified by Board of Education for 90 girls, and also certified by Home Office.</i>
St. Raphael's, The Butts, Brentford	The Order of the Poor Servants of the Mother of God.	Do.	do.	60 high-grade feeble-minded girls of 16 years and upwards. Roman Catholics.
Norfolk ... Little Plumstead Hall, Little Plumstead, with ancillary premises: Heckingham Institution, Heckingham.	Norfolk C.C.... (Medical Superintendent: J. V. Morris, M.B.).	J. Middleton, M.B.E., Thorpe Mental Hospital, Norwich. Do.	do.	110 males and 146 females.  56 male and 120 female adults.
(Norwich C.B.) Eaton Grange, Unthank Rd., Norwich.	Norwich C.B.	J. F. Betts, Justices Room, Guildhall, Norwich.	do.	30 high-grade female adults and 7 juvenile cot and chair cases.
Northumberland Prudhoe Hall Colony, Prudhoe - on - Tyne, Northumberland*	North Eastern County Boroughs Joint Board for the Mentally Defective.	H. D. Irwin, 10, Ellison Place, Newcastle-on-Tyne.	do.	196 males and 226 females: all classes. <i>Certified by Board of Education for 50 boys and girls.</i>
The Home of Industry, Bow Villa, Morpeth. Cowpen Hall, Blyth ...	Committee of Management ...	Do.	do.	16 female adults.
Greenholme Institution, Haltwhistle. Rothbury Institution, Rothbury.	Northumberland M.D. Committee ...  Do. Do.	Do. Do. Do.	do. do. do.	38 male adults.  51 male adults.  44 females: 39 medium to high grade women, and 5 medium to low grade girls.
Oxford ... Borocourt, Peppard, Henley-on-Thames.	Bucks, Oxon and Reading Joint Board for the Mentally Defective.	F. G. Scott, County Hall, Oxford.	do.	161 female adults; 46 male adults.

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## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situated C.B. = County Borough	Name and Address of Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Somerset ...	The Friars, Fryern Lawn, Bridgwater.	The Committee ... Miss A. E. Best.	C. E. Newman, 68, Boulevard, Weston-super-Mare.	17 females. Feeble-minded and moral defectives.
	Sandhill Park, Bishop's Lydeard, Taunton,* <i>with ancillary premises:</i> Yatton Hall, Yatton, Bristol;	Somerset C.C. ... G. W. J. (Medical Superintendent: Mackay, M.B., D.P.M.)	Do. do.	60 males and 101 females. <i>Certified by Board of Education for 50 boys and 50 girls.</i>
	Cambridge House, Long Ashton, Bristol; and West End House, Shepton Mallet.		Do. do.	76 patients.
	The House of Help for Women and Girls, 112 Walcot Street, Bath.	Board of Management ... Miss L. Glynn Baker, 112, Walcot Street, Bath.	R. H. Whittington, Guildhall, Bath.	104 males.
(Bath C.B.) ...	The Old Rectory, Bathwick Hill, Bath.	Bath Voluntary Association ... Miss Trimmell, Guildhall, Bath.	Do. do.	129 females.
(Do.) ...	Rock Hall House (Magdalen Hospital School), Combe Down, Bath.	Municipal Charity Trustees of the City of Bath. Sec.:—A. I. Ingram, 4, Queen Square, Bath.	Do. do.	66 feeble-minded females.
(Do.) ...	Stoke Park, Bristol, <i>with ancillary premises.</i>	See under County of Gloucester.		21 high or medium grade feeble-minded adult females <i>admitted</i> on licence from other Institutions.
Stafford ...	Stallington Hall, Blythe Bridge, Stoke-on-Trent.	Stoke-on-Trent County Borough Council	H. L. Underwood, M.A., LL.B., County Buildings, Stafford	38 children of both sexes.
	Great Barr Park Colony, Great Barr, Birmingham.	Wallsall and West Bromwich Joint Board. (Medical Superintendent, D. M. MacMillan, M.B.)	Do. do.	77. <i>Mansion</i> : 16 boys under 21 and 44 females. <i>Male Block</i> : 17 males over 16.
Suffolk ...	Handford Home, Ranesham Road, Ipswich.	Ipswich County Borough Council...	F. S. Ward, 32, Museum Street, Ipswich.	683 patients.
	St. Joseph's Home, The Croft, Sudbury.	Board of Management ...	T. M. Braithwaite, Sudbury.	22 females. High-grade feeble-minded cases over the age of 16 years.
				28 feeble-minded females from 16 to 20 years of age, and of the Roman Catholic religion. Poor Law cases received.

disposition.	on-Thames.	The County Hall, Westminster Bridge, S.E.1.	Do. do. do.	611 males and 681 females. All classes within the meaning of the Act. Reserved for London cases only.
575 patients of both sexes.	Do.	Board of Management ... ..	Do.	575 patients of both sexes.
30 feeble-minded males—age on admission 16 to 20 years. Church of England cases only.	Do.	Sec.:—H. Stephens, 14/16, Ludgate Hill, London, E.C.4.	Do.	30 feeble-minded males—age on admission 16 to 20 years. Church of England cases only.
97 male adults of the younger employable type.	Do.	(Medical Superintendent: S. Langton, M.B.) The Congregation of the Servants of Christ the King ... ..	Do.	97 male adults of the younger employable type.
256 female adults and children of either sex.	Do.	Surrey County Council. ... ..	Do.	256 female adults and children of either sex.
102 males. Imbeciles and feeble-minded over the age of 16.	Do.	Do. do. do. ... ..	Do.	102 males. Imbeciles and feeble-minded over the age of 16.
32 high-grade male adults.	Do.	Surrey Voluntary Association ... ..	Do.	32 high-grade male adults.
46 high grade imbecile and feeble-minded females over 16.	Do.	(Sec.:—Miss W. Gibson, B.Sc., 18, Park Street, Guildford.) do. do.	Do.	46 high grade imbecile and feeble-minded females over 16.
30 blind defectives up to the age of 16. Certified by Board of Education for 30 children.	Do.	Executive Committee, Braille and Servers of the Blind League.	Do.	30 blind defectives up to the age of 16. Certified by Board of Education for 30 children.
20 low-grade juvenile males.	J.M. Newnham, Town Hall, Croydon	Croydon County Borough Council ... ..	J.M. Newnham, Town Hall, Croydon	20 low-grade juvenile males.
42 females.	H. J. T. McIlveen, County Hall, Lewes.	See under County of Hampshire—St. Mary's Home, Alton.	H. J. T. McIlveen, County Hall, Lewes.	42 females.
7 feeble-minded males.	Do.	The Committee: E. Sussex County Council Hon. Sec.: Miss M. Beale, Standen, East Grinstead.	Do.	7 feeble-minded males.
7 feeble-minded males.	Do.	Guardianship Society, Brighton ... ..	Do.	7 feeble-minded males.
		(Sec.: Miss G. E. Woodhead, 8, Grand Parade, Brighton.) do. do. ... ..		
		Tubwell Farm, Jarvis Brook.		

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## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situate C.B. = County Borough.	Address of the Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Sussex, East— <i>contd.</i>	Lughton Lodge, Laughton, Lewes.	Brighton County Borough Council ...	H. J. T. McIlveen, County Hall, Lewes.	34 male adults.
Sussex, West ...	The Home of the Holy Rood, Worthing.	<i>See under</i> County of Hampshire—St. Mary's Home, Alton.	Mary's Home, Alton.	
Warwick ...	Midland Counties Institution, Knowle, near Birmingham.	General and Managing Committee ...	A. C. Burrows, I, New Street, Warwick.	197 male patients.
	Warwickshire Weston Colony, Weston-under-Weatherley, Leamington Spa.	Warwick C.C. ...	Do.	32 male and 106 female feeble-minded adults.
(Birmingham C.B.)	Coleshill Hall, near Birmingham.	Birmingham C.B. Council (Medical Superintendent: H. F. Stephens, L.R.C.P.) The Committee of the Agatha Stacey Home.	Do.	120 males and 180 females aged 16 years and upwards.
(Do.)	The Agatha Stacey Home, Rednal, near Birmingham.	Sec.:—Miss M. E. Warner, Depot, 158, Broad Street, Birmingham. Birmingham C.B. Council (Medical Superintendent: A. M. McCutcheon, F.R.F.P.S.)	C. E. Barker, Birmingham.	40 high-grade female feeble-minded patients over 15 years of age.
	Monyhull Colony * King's Heath, Birmingham, with ancillary premises: "The Laurels," 233, Monyhull Road, King's Norton.		Do.	583 males and 647 females. All classes. <i>Certified by the Board of Education for 310 children.</i>
Wilts ...	Pewsey Colony, I, Wilcot Road, Pewsey.	Wilts C.C. ...	W. L. Bown, Trowbridge.	"The Laurels"—13 female adults.
Worcester ...	Besford Court Home, near Defford.*† with ancillary premises: St. Joseph's, Astwood Bank, near Redditch.	Committee of Management ...	C. H. Bird, Shire Hall, Worcester.	201 patients. 190 males; all cases, whether under or over the age of 16 years, to be of a degree of mental defect such as will permit of their being housed and instructed with the children for whom the school is primarily intended. Total cases not to exceed 380. <i>Certified by Board of Education for 210 boys, and also certified by Home Office</i>

Yorks, N.R.	...	Claypenny Colony, Easingwold.	North Riding of Yorks C.C.	...	Maj. H. H. Dryland, M.B.E., Clifton, York.	63 adult and 16 juvenile females and 11 cot and chair cases of either sex.
Yorks, W.R.	...	Rawcliffe Hall, near Goole.	West Riding of Yorks C.C. Sec.:—W. H. Brown, County Hall, Wakefield.	...	W. H. Coles, Burton Street, Wakefield.	121 females. All classes within the meaning of the Act—10 years of age and upwards.
(Leeds C.B.)	...	Meanwood Park Colony, Meanwood, Leeds.	Leeds C.B. Council. Correspondent:—S. Wormald, Executive Officer, 38, Park Square, Leeds.	...	F. Richards, Town Hall, Leeds.	163 males and 268 females.
(Do.)	...	Kepstorn, Morris Lane, Kirkstall, Leeds.	Do.	...	Do. do.	40 females. High grade feeble-minded patients over 16 years of age.
Yorks, W.R.	...	Mid-Yorks Certified Institution, Whixley, Yorks.	Mid-Yorkshire Joint Board for the Mentally Defective. Clerk:—T. Thornton, Town Clerk's Office, 11, Park Square, Leeds.	...	W. H. Coles, Burton Street, Wakefield.	214 males. All classes within the meaning of the Act.
		The Mansion, Kirkburton, near Huddersfield.	West Riding of Yorks C.C.	...	Do. do.	60 females.
		Oulton Hall, Oulton, near Leeds.	Do. do.	...	Do. do.	264 males. In-County cases only.
		St. Catherine's, Lovellsall, Doncaster.	S.W. Yorkshire Joint Board for the Mentally Defective.	...	Do. do.	160 males and 140 females.
		Craigie Lea Children's Home, Ovenden, Halifax	Halifax County Borough Council	...	Do. do.	16 males and 12 females.
		Hollow Meadows, Malin Bridge, Sheffield.	Sheffield C.B. Council	...	Do. do.	58 imbecile and feeble-minded males.
		Wales Court, Wales, Kiveton, Sheffield.	Do. do.	...	Do. do.	50 females. All classes within the meaning of the Act.

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## CERTIFIED INSTITUTIONS—continued.

COUNTY or COUNTY BOROUGH within which the Institution is situated. C.B. = County Borough.	Address of the Institution.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
(Sheffield C.B.)	Cliffe House, Elm Lane, Shiregreen, Sheffield.	Sheffield C.B. Council    ...    ...	F. B. Dingle, Court House, Sheffield.	29 low-grade juvenile males.
(Bradford C.B.)	Westwood, Clayton Heights, Clayton, near Bradford, <i>with ancillary premises</i> : Ashfield, 269, Thornton Road, Thornton, near Bradford.	The County Borough Council of Bradford Clerk:—Town Clerk, Town Hall, Bradford.	W. H. Coles, Bank House, Burton St., Wakefield.	180 males and 60 females.
Yorks, E.R.    ... (Kingston-on-Hull, C.B.)	Tilworth Grange, Sutton, Hull. Brandesburton Hall, Brandesburton.	Kingston-on-Hull County Borough Council E. Riding and York Joint Board    ...	W. C. Bairstow, Law Courts, Hull. Sir Godfrey Macdonald, Bt., County Hall, Beverley.	50 females.  83 females. All classes within the meaning of the Act. 65 medium to high-grade females (juveniles and younger adults); 35 active low-grade females of all ages; 21 working males over the age of 16 years.

## INSTITUTIONS APPROVED UNDER SECTION 37.

Owning Local Authority. (C.B.=County Borough.)	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Bedford...	St. Peter's Hospital, Kimbolton Road, Bedford.	G. J. M. Whyley, Bedford	13 adult females.
	1, Grovebury Road, Leighton Buzzard.	J. B. Graham, Shire Hall, Bedford.	6 adult females. Active medium to low grade.
Berks ...	Central House, Bradfield, Reading	H. J. C. Neobard, Shire Hall, Reading.	95 females.
	Easthampstead Public Assistance Institution, Easthampstead.	Do.	106 males.
Bucks ...	100, Bierton Hill, Aylesbury	H. Fisher, County Hall, Aylesbury	18 male and 12 female adults.
	1, Buckingham Road, Winslow	Do.	9 males and 40 females. Medium to low grade adults.
Cambridge ...	81A, Mill Road, Cambridge	J. Lyon, 21, St. Andrew Street, Cambridge.	4 male and 10 female adults. Suitable for treatment in a common ward.
	29, Union Lane, Cambridge	Do.	2 male and 8 female adults.
	The Red House, Linton	A. Tabrum, Shire Hall, Cambridge.	4 of each sex.
Isle of Ely ...	Tower House, Cambridge Road, Ely	C. E. F. Copeman, M.A., County Hall, March.	10 female adults.



INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority. (C.B.=County Borough.)	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Caernarvon ... ..	Eryri Hospital, Caernarvon ...	David G. Jones, Caernarvon ...	19 males under 12 and 16 females under 16.
Cheshire ... ..	Tarvin House, Boughton Heath, Chester. Congleton Public Assistance Insti- tution, Sandbach.	G. C. Scrimgeour, Northgate Street, Chester. Do. do.	15 male and 40 female adults. 16 male adults and 14 juveniles of either sex.
(Birkenhead C.B.)	Birkenhead Union Sanatorium, Tranmere, Birkenhead.	E. W. T. Gasking, Sessions Court, Birkenhead.	30 adults.
(Chester C.B.)	57, Hoole Lane, Chester ...	G. C. Scrimgeour, Northgate Street, Chester.	40 females.
Cornwall ... ..	Berry Tower House, Bodmin ...	F. A. H. Sheers, Clerk of the Peace, Truro.	5 male and 20 female adults.
	Budock House, Falmouth ...	Do. do.	34 males and 36 females; (10 adult males, 21 adult females, and 24 male and 15 female juvenile defectives).
Denbigh ... ..	Gorphwysfa Hospital, Ruthin ...	W. Jones, Ruthin ...	15 male and 20 female adults.
Derby ... ..	12A, Newbold Road, Chesterfield ...	W. B. Bunting, Chapel-en-le-Frith	1 adult female.
	Shire Hill View, Glossop ...	Do. do.	12 male and 12 female adults.
(Derby C.B.)	Boundary House, Uttoxeter Road, Derby.	W. R. H. Whiston, Derby ...	30 adult females.
Devon ... ..	19, Alexandra Road, Barnstaple ...	S. A. Copp, Barnstaple ...	20 male and 6 female adults.
	Red Hill House, St. Thomas, Exeter	J. I. Pengelly, The Court House, Exeter.	6 male and 12 female adults.
	1, North Road, South Molton ...	J. Furze Saunders, South Molton	15 male and 34 female adults.
(Plymouth C.B.)	Ford House, Auckland Road, Devonport.	J. Bone, Plymouth ...	25 male and 50 female adults.
(Exeter C.B.)	Exeter City Hospital, Heavitree Road, Exeter.	J. I. Pengelly, The Court House, Exeter.	12 adults of each sex.

Dorset ...	...	Bedford House, Bedford Place, Brixport.	J. L. Torr, Dorchester	...	29 female adults.
Durham ...	...	Oaklands, Bishop Auckland	G. H. Watson, Darlington	...	82 adult females.
(Darlington C.B.)	...	90, Yarm Road, Darlington	Do.	do.	12 males and 12 females. Medium to low-grade adults.
(Gateshead C.B.)	...	High Teams Hospital, Gateshead...	Do.	do.	4 male and 19 female adults.
(W. Hartlepool C.B.)	...	Howbeck House, West Hartlepool	Do.	do.	50 males and 160 females.
(South Shields C.B.)	...	1, Moor Lane, West Harton, South Shields.	Do.	do.	78 adult males.
(Sunderland C.B.)	...	"Highfield," Hylton Road, Sunderland.	E. S. Dingle, Sunderland	...	2 male and 1 female adults.
Essex ...	...	People's Home, Saffron Walden	C. S. D. Wade, Clerk of the Peace, Saffron Walden.	...	18 female adults.
(West Ham C.B.)	...	Winstree House, Stanway, Colchester.	H. F. Bawtree, Witham	...	36 female adults.
Flint ...	...	The Forest Gate Hospital,* Forest Lane, Forest Gate, E.7.	J. H. Jackson, Police Court, West Ham, E.15.	...	20 male and 30 female adults and 10 males and 15 females under the age of 16 years. <i>Certified by Board of Education for 15 cases.</i> 12 adults of each sex.
Glamorgan (Cardiff C.B.)	...	Cartrefle, St. Asaph	J. Harvey Davies, County Offices, Mold.	...	152—not more than 89 males and not more than 69 females.
Gloucester ...	...	Ely Lodge, Ely, Cardiff	E. J. Hayward, Law Courts, Cardiff	...	10 female adults and 15 male and 10 female juveniles.
(Bristol C.B.)	...	24, Queen's Hill, Cirencester	R. W. Ellett, Cirencester	...	25 active low-grade adult males
	...	East View, Mangersbury, Stow-on-the-Wold.	R. Moon, Shire Hall, Gloucester...	...	100 male and 100 female adults.
	...	Stapleton Institution, Fishponds, Bristol.	S. Young, Petty Sessional Court House, Bristol.	...	

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INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority. (C.B.=County Borough.)	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Hereford ... ..	The Infirmary, Ross ... ..	E. W. Maples, Hereford ... ..	25 male and 15 female adults.
Herts ... ..	"Haymeads," Bishop Stortford ... .. 60, Vicarage Road, Watford ... ..	Elton Longmore, Hertford ... .. Do. do.	40 female older adults. 18 male and 22 female adults.
Isle of Wight ... ..	Forest House, Parkhurst, Isle of Wight.	A. J. Rogers, Magistrates Clerk's Office, Southampton.	20 males and 20 females. Idiot, imbecile, or feeble-minded defectives between the ages of 16 and 60 years.
Kent ... ..	Hartley House, Cranbrook ... ..	Charles E. Warner, Tonbridge ... ..	15 male and 20 female adults.
	King's Hill, West Malling ... ..	Do. do.	14 female adults.
	2, Mill Lane, Sandwich ... ..	Do. do.	60 male and 24 female adults; 35 male and 11 female juveniles.
	Birchfield House, Sundridge, Seven-oaks.	Do. do.	30 female adults.
(Canterbury C.B.)	The Home, Nunnery Fields, Canterbury.	T. A. Bowen, Clerk to Justices, Canterbury.	10 male and 10 female adults.
Lancashire ... ..	27, Stanley Street, Ulverston ... ..	J. T. Sanderson, 67, Church Street, Lancaster.	85 adult females.
(Manchester C.B.)	Swinton Home, Manchester ... ..	W. Procter, 36, Brazennose Street, Manchester.	61 males and 61 females under the age of 16 years.
	Eaves Lane, Chorley ... ..	L. Cotman, 8 Lune Street, Preston	15 male and 35 female adults.
	Clitheroe Public Assistance Institution.	Do. do.	39 older adult males of active lower grade type.
(Liverpool C.B.)	Seafeld House, Seaforth, Liverpool	G. W. Swift, 74, Hanover Street, Liverpool.	101 males and 134 females.
Leicester ... ..	59A, Regent Street, Loughborough	L. E. Rumsey, 10, New Street, Leicester.	40 female adults; feeble-minded and high grade.
	Mountsorrel Public Assistance Institution, Mountsorrel, Loughborough.	Do. do.	23 male adults.

Lincoln (Kesteven)	...	Dysart Road, Grantham ...	...	R. F. M. White, Grantham ...	5 male and 15 female adults.
Do.	...	93, East Gate, Sleaford ...	...	W. T. Phipps, Grantham ...	1 male and 7 female adults.
Do.	...	Well Head House, Bourne	...	Do. do.	4 female adults.
(Lincoln C.B.)	...	8A, Burton Road, Lincoln	...	W. M. Phillips, Clerk to the Justices, Lincoln.	10 adults of each sex. Medium to low grade.
London ...	...	Darent Training Colony, Dartford	...	Chas. E. Warner, Tonbridge	Trainable cases.
		Leavesden Mental Hospital, Abbot's Langley, Watford.		Elton Longmore, Hertford.	Unimprovable adults and cases of chronic infirmity.
		Caterham Mental Hospital, Caterham, Surrey.		D. Aukland, County Hall, Kingston-on-Thames.	Unimprovable adults. Low-grade trainable children. 35 high-grade employable adult males at Chaldon Mead.
		Fountain Mental Hospital, Tooting Grove, S.W.17.		Jno. Dix, Sessions House, Newington, S.E.1.	Children. All classes up to 9 years. Unimprovable. Girls up to 16 years. Adult female working patients.
		St. Stephen's Hospital, 369, Fulham Road, S.W.10.		Do. do.	5 male and 10 female adults suffering from venereal disease.
Merioneth ...	...	Minffordd, Penrhyndeudraeth, Merioneth.	...	H. J. Owen, Clerk of the Peace, Dolgelly.	23 male and 27 female adults.
Middlesex ...	...	Enfield House, 19, Chase Side Crescent, Enfield; with ancillary premises; Fortescue Villas, Gentleman's Row, Enfield.	...	E. S. W. Hart, Guildhall, Westminster, S.W.1.	Enfield House—42 feeble-minded males. Fortescue Villas—32 females (idiots and imbeciles) under the age of 16 years, and 4 or 5 higher grade and older girls.
		1, Colham Green, Hillingdon East, Uxbridge.		Do. do.	12 male and 21 female adults.



INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority. (C.B.=County Borough.)	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Monmouth ... ..	Coedygic Institution, Griffiths-town.	T. L. Hughes, Clerk of the Peace, Newport (Mon.).	55 female adults.
Montgomery ... ..	Cae Hein, Forden, Welshpool ...	J. E. Tomley, Montgomery ...	32 male and 48 female adults.
	The Lodge, Caersws, Mont. ...	Do. do. ...	53 males and 46 females under 16 years of age.
Norfolk ... ..	Hill House, Pulham Market ...	J. Middleton, M.B.E., Thorpe Mental Hospital, Norwich. ...	12 adult females.
	Cades Hill House, Attleborough ...	Do. do. ...	12 adult females.
Northampton ... ..	77, London Road, Kettering ...	H. J. Cove, Northampton ...	16 male and 16 female adults.
	3A, Castle Street, Wellingborough	Do. do. ...	10 male and 20 female adults.
(Northampton C.B.)	137A, Wellingborough Road, Northampton.	A. J. Redhead, Northampton ...	9 adults.
(Soke of Peterborough)	Thorpe Road House, Peterborough	W. J. Deacon, Clerk of the Peace, Peterborough.	12 male and 21 female adults.
Notts ... ..	121, Highbury Road, Bulwell, Nottingham.	K. T. Meaby, Shire Hall, Nottingham.	40 female adults.
	1, Leverton Road, East Retford ...	Do. do. ...	4 male and 8 female adults.
	105, Stockwell Gate, Mansfield ...	Do. do. ...	6 male and 12 female adults.
	Greet House, Upton, Southwell ...	Do. do. ...	3 male and 4 female adults.
Oxford ... ..	26, London Road, Chipping Norton	F. G. Scott, County Hall, Oxford.	14 male and 40 female adults.

Rutland	...	The Ashes, Ashwell Road, Oakham	R. C. Dalton, Clerk of the Peace, Oakham.	8 adult females.
Shropshire	...	50, Shrewsbury Road, Church Stretton.	W. L. Edge, County Buildings, Shrewsbury.	5 female adults.
		The Beeches, Iron Bridge, Salop ...	C. J. Sargeant, Much Wenlock ...	10 male and 15 female adults.
Somerset (Bath C.B.)		Frome Road House Institution, Odd Down, Bath.	R. H. Whittington, Guildhall, Bath.	10 male adults.
Southampton	...	Cowderys Down House, Basing ...	A. J. Rogers, Magistrates Clerk's Office, Southampton.	30 females. Feeble-minded over 16.
		52, Wickham Road, Fareham ...	Do. do.	30 male and 10 female adults.
		Barton House, Fordingbridge, Salisbury.	Do. do.	14 male and 13 female adults.
(Portsmouth C.B.)		St. Mary's Hospital, Milton, Portsmouth.	B. J. Tay, Guildhall, Portsmouth	29 male and 31 female adults.
Stafford	...	15, Trent Valley Road, Lichfield ...	A. H. Barnes, Lichfield ...	2 female adults.
		Burton House, 10, Burton Road, Sedgley.	H. L. Underwood, M.A., LL.B., County Buildings, Stafford.	50 male and 65 female adults.
(Burton-on-Trent C.B.)		145, Belvedere Road, Burton-on-Trent.	H. W. Goodger, Stapenhill, Burton-on-Trent.	10 male and 15 female adults.
		Sandfield House, Wordsley, Stourbridge, with ancillary premises (annex): Sandfield, Wordsley.	H. L. Underwood, M.A., LL.B., County Buildings, Stafford.	186 male and 130 female adults, and 68 children, on the understanding that not more than 36 cases shall be received into "Sandfield."
		31, Wigginton Road, Tamworth ...	Do. do.	12 female adults.
(Wolverhampton C.B.)		Heath Town, Wolverhampton ...	H. M. Foster, Town Hall, Wolverhampton.	17 male and 14 female adults.
Suffolk (Ipswich C.B.)	...	Heathfield, Woodbridge Road, Ipswich.	F. S. Ward, 32, Museum Street, Ipswich.	20 male and 25 female adults.
Surrey	...	2, Horsham Road, Dorking ...	D. Aukland, County Hall, Kingston-on-Thames.	12 female adults.
		St. John's, Redhill ...	Do. do.	1 male and 9 female adults. (In-County cases only.)



INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority. (C.B.=County Borough.)	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
Sussex (East) ... ..	West Hylands, Cuckfield ... ..	H. J. T. McIlveen, County Hall, Lewes.	10 male and 20 female adults.
	2, Upper Shoreham Road, Kingston-by-Sea.	Do. do.	5 adults of each sex.
	Pouchlands House, East Chiltington, Lewes.	Do. do.	36 male and 12 female adults.
(Eastbourne C.B.) ...	St. Mary's Institution, 123, Church Street, Eastbourne.	Do. do.	7 adult females.
(Hastings C.B.) ...	40, Frederick Road, Hastings ...	F. G. Langham, Palace Chambers, Hastings.	12 adults of each sex.
Sussex (West) ... ..	78, Crawley Road, Horsham ...	J. E. Seager, County Hall, Chichester.	5 male and 10 female adults.
	Budgenor Lodge, Midhurst ...	Do. do.	5 male and 15 female adults.
	North View, East Preston, Littlehampton.	Do. do.	6 male and 15 female adults.
Warwick (Birmingham C.B.)	Erdington House, Erdington, Birmingham.	C. E. Barker, Birmingham ...	50 adults of each sex, and 31 male and 30 female juveniles.
	Western House, Birmingham ...	Do. do.	6 adult females suffering from venereal disease.
Warwick ... ..	91, Union Road, Warwick ...	J. Tibbits, Warwick ...	4 male and 24 female adults.
	Alcester Public Assistance Institution.	A. C. Burrows, 1, New Street, Warwick.	23 adult females.
Westmorland ... ..	Ackenthwaite End, Milnthorpe, Westmorland.	H. B. Greenwood, Clerk of the Peace, Kendal.	26 adult males, 27 adult females, and 18 boys and 24 girls.
Wilts ... ..	7, Commercial Road, Devizes ...	A. Hodge, Magistrates Clerk's Office, Devizes.	32 males under 16 and 16 females who are employable younger adults.

Worcester ... (Worcester C.B.) ...	Purton, near Swindon ...	W. L. Bown, Trowbridge ...	18 boys and girls under 16 : idiots and cot and chair cases.
	Semington House, Trowbridge ...	Do. do.	22 male and 36 female adults.
	Kings Way House, Wilton, Salisbury.	Do. do.	65 female adults.
	5, Avonside, Hampton, Evesham...	C. H. Bird, Worcester ...	4 females.
Yorkshire : East Riding (Kingston-upon-Hull C.B.) (York C.B.) ...	Municipal Homes, Tallow Hill, Worcester.	J. L. Wood, Guildhall, Worcester	30 male and 20 female adults.
	19, Bridlington Road, Driffeld ...	Sir Godfrey Macdonald, Bt., County Hall, Beverley.	21 male and 31 female adults.
	188, Anlaby Road, Kingston-upon-Hull.	W. C. Bairstow, The Law Courts, Hull.	24 male and 24 female adults.
	75, Huntington Road, York ...	H. Venn Scott, Clifford Street, York.	10 male and 15 female adults (medium to active low grade), and 20 low-grade juvenile males.
Yorkshire : North Riding	High Hall, Bainbridge, Askrigg ...	Major H. H. Dryland, M.B.E., Clifton, York.	20 female adults.
	Sunbeck House, Northallerton ...	Do. do.	6 male and 6 female adults.
	18, Dean Road, Scarborough ...	C. W. Goodall, Scarborough ...	35 male and 32 female adults.
	Barnabas Road, Middlesbrough ...	T. Belk, Municipal Buildings, Middlesbrough.	7 adult females.
Yorkshire : West Riding (Barnsley C.B.)	80, Gawber Road, Barnsley ...	W. H. Coles, Burton Street, Wakefield.	10 adults of each sex.
(Doncaster C.B.) ...	Springwell House, Balby, Doncaster	W. M. R. Lewis, Doncaster ...	20 adults of each sex.



INSTITUTIONS APPROVED UNDER SECTION 37—*continued.*

Owning Local Authority. (C.B.=County Borough.)	Address of the Institution.	Clerk to Visitors.	Number and Class of Defectives.
(Halifax C.B.) ...	166, Gibbet Street, Halifax ...	W. H. Coles, Wakefield ...	16 male and 20 female adult active medium to low grade defectives.
(Huddersfield C.B.) ...	61, Deanhouse, Netherthong, Huddersfield. 1, Reins Road, Giggleswick, Settle	Do. do.	10 male and 25 female adults.
(Sheffield C.B.) ...	Fir Vale House, Pitsmoor, Sheffield	F. B. Dingle, Sheffield ...	37 males and 5 females, 27 males under sixteen years of age to be accommodated in the Isolation Hospital and 10 male and 5 female adults in the Main Building.
	The Beeches, Tadcaster ...	W. H. Coles, Wakefield ...	40 male and 75 female adults,
	Greno Buildings, Grenoside, Sheffield.	Do. do.	24 adult females.
			20 feeble-minded adult females.

## CERTIFIED HOUSES.

COUNTY.	Name and Address of House.	Names of Managers or Owners.	Clerk to Visitors.	Number and Class of Defectives.
Herts ...	Arniston Nursery School, Boxmoor House, Boxmoor, Herts.	Miss J. M. Isbister and Miss M. D. Isbister	Elton Longmore, Hertford.	22 low-grade cases of either sex.
Lancashire ...	Cavendish House, Woodvale, Ainsdale, near Southport.	Miss Hutsby... ..	G. W. Swift, 74, Hanover Street, Liverpool	42 female patients from 3 years of age.
Middlesex ...	St. Margaret's, 9, Priory Road, Bedford Park, London, W.4.	Miss Rose H. D. Whiting ... ..	E. S. W. Hart, Guildhall, Westminster, S.W.1.	10 females. Imbeciles and feeble-minded.
	Larkfield, Hampton Hill	Mrs. Adeline M. Campbell... ..	Do. do.	14 juveniles: ambulant trainable cases.
	Normansfield, Kingston Road, Teddington.	R. L. Langdon-Down, M.B., and P. L. Langdon-Down, M.B.	Do. do.	150 males and females, not more than 100 of either sex at any one time.
Sussex, East ...	St. Joseph's Home, Burgess hill.	Proprietors of St. George's Retreat ... ..	H. J. T. McIlveen, County Hall, Lewes.	30 females of 12 years of age and upwards.
(Brighton C.B.)	Villa Maria, Kemp Town, Brighton.	Do. do. ... ..	A. G. Walker, Clerk to Justices, Brighton.	12 females. All classes within the meaning of the Act from 12 years of age and upwards.



## APPROVED HOMES.

COUNTY.	Name and Address of Home.	Names of Managers or Owners.	Number and Class of Defectives.
Berks	St. Agnes, Grove Hill, Caversham.	Miss Sarah Dugdale	3 male and 5 female juveniles.
Bucks	Lynwood, Woburn Sands, Bucks.	Mr. and Mrs. C. D. F. G. Loveless	7 males.
Cheshire	"Westfield," London Road, Poynton.	Miss E. C. and Miss M. F. Evatt	4 patients of one sex and 6 of the other between the ages of 5 and 16 years.
Cornwall	The Elizabeth Barclay Home of Industry, Bodmin.	The Committee of the Elizabeth Barclay Home of Industry, Bodmin.	26 females.
Devon	Raleigh House, Ottery St. Mary.	Sec.:—Miss I. K. Cruddas, St. Anne's, Bodmin. Miss L. Cottrell and Miss E. Costiff	4 male and 11 female juveniles.
Dorset	Shirley, West Moors	Miss E. Coffin	6 feeble-minded female adults.
Essex...	Gay Bowers, West Hanningfield, Chelmsford.	Mr. Percy and Mrs. Gertrude Chennells	7 of one sex.
Gloucester	Southend House School, Hat-herley Brake, Cheltenham.	Miss Agnes King-Turner	25 cases of either sex—each child in all respects suitable to be in a house where the sexes are associated.
Herts...	Rowley Lodge, Rowley Green, Barnet	Miss E. M. Wall	15 children.
	Jersey Farm, Sandridge, St. Albans, <i>with ancillary premises:</i> White House Farm Cottages, N.14.	H. Corner, M.D.	16 patients—14 males at Jersey Farm and 2 either male or female at White House Farm Cottages.
Kent...	Upper Hollenden Farm, Princess Christian's Farm Colony, Hildenboro', Kent.	National Association for the Feeble-minded, 72, Denison House, 296, Vauxhall Bridge Road, Westminster, S.W.1.	18 adult males.
	Grove House School, Pluckley, Ashford.	Mr. and Mrs. H. T. Green	26 males between the ages of 7 and 16 years.
	Larkfield Hall, Larkfield, Maidstone.	Miss B. Sargeant	5 male and 6 female children.
	The Maples, High Street, Sevenoaks.	Mrs. S. P. Clark	15 feeble-minded employable adult females.

Merioneth	...	...	Bryn School, Hengwrt Uchaf, Dolgelly.	Miss C. E. Gibson	...	...	...	50 males under the age of 16 years.
Middlesex	...	...	Alexander House, 117, High Street, Uxbridge.	National Association for the Feeble-minded, 72, Denison House, 296, Vauxhall Bridge Road, Westminster, S.W.1. Hon. Sec.:—Mrs. O. Western, 23, Langland Gar- dens, Hampstead, N.W.3. R. L. Langdon-Down, M.B., and P. L. Langdon- Down, M.B., Normansfield, Hampton Wick. Do. do.	...	...	...	24 females.
			Conifers, Kingston Road, Hampton Wick.					3 male (children) and 22 female private patients.
			Trematon, Broom Road, Teddington.					24 males. Private.
			St. Christopher's School, Amherst Road, Ealing, W.	Miss M. C. B. Foster	...	...	...	28 feeble-minded private patients.
			Meadowside, Cambridge Road, Teddington.	Miss F. M. Deck	...	...	...	9 patients of both sexes, provided each case is in all respects suitable to reside in a house where the sexes are associated.
Norfolk	...	...	Ingleside, Trimmingham, Norwich.	Miss S. A. Huntly	...	...	...	13 females.
Oxford	...	...	St. Joseph's, Aston, Oxford	Mrs. E. de V. Lawson	...	...	...	8 male adults.
Salop	...	...	West of England School of Handicrafts (excluding Annexe), Burlton, Salop.	Mr. Thomas J. Parry	...	...	...	50 males, aged 16 years and upwards.
Somerset	...	...	Lyncombe Hall, Bath	Miss W. Stanley	...	...	...	12 children.
Suffolk	...	...	Dyke House, Methwold, Brandon.	Mr. L. Porter-Morris and Mr. A. E. Norbert Bates	...	...	...	8 males over 16 years of age.
Surrey	...	...	Belmont Nursery, Ravens- croft, Warlingham, Donec, Grayshott, Hindhead.	Mrs. Lilian Mason	...	...	...	35 children of either sex.
			Lynton, Coombe Lane, Kingston Hill.	Miss R. L. Binney	...	...	...	8 females.
			Tilden Cottage, Hindhead ...	Miss M. I. Morrell	...	...	...	6 females between the ages of 14 and 18 years on admission.
Sussex (East)	...	...	St. Paul's House, Upper Maze Hill, St. Leonards-on-Sea.	Miss A. Willsher	...	...	...	8 adult males.
(Hastings C.B.)				Miss A. Meiklejon	...	...	...	33 defectives, not more than 5 to be males.



APPROVED HOMES—*continued*.

COUNTY.	Name and Address of Home.	Names of Managers or Owners.	Number and Class of Defectives.
Sussex (East) (Hastings C.B.)	Dunclutha, St. Helen's Park, Hastings.	Miss Mole and Miss Bruce	40 males.
	The Margaret Macdowall School, Inholmes Park Road, Burgess Hill.	Miss A. Park and Miss E. M. Shelton	16.
	Roffey House, Church Road, Burgess Hill.	Miss O. B. Matthews	10 children.
Sussex (West)	The Priory, Tortington, near Arundel.	Miss D. S. Ault	12 males.
	Coll House, Aldingbourne, Chichester.	Miss M. A. N. Tabuteau	9 boys.
	Haute Terre, Franklyn Road, Hayward's Heath.	Miss L. H. Smyth	10 children.
	The Cedars, North Parade, Horsham.	Miss V. McV. Moore	8 males aged 14 years and upwards.
Warwick	The Vineyard (including Vinette), Longbridge Lane, Birmingham.	Miss M. F. Bridie	42 children between the ages of 6 and 16 years, of whom 8 patients of one sex shall be accommodated at "Vinette."
	Hughenden, Tile Hill, Coventry.	Mrs. L. Steer	22 male children.
Worcester	Clent Grove, Clent, Stourbridge, and Sunfield Children's Home, Weoley Park Road, Selly Oak, Birmingham.	Mr. M. H. Wilson	57 patients.











